THOMSON MULTIMEDIA

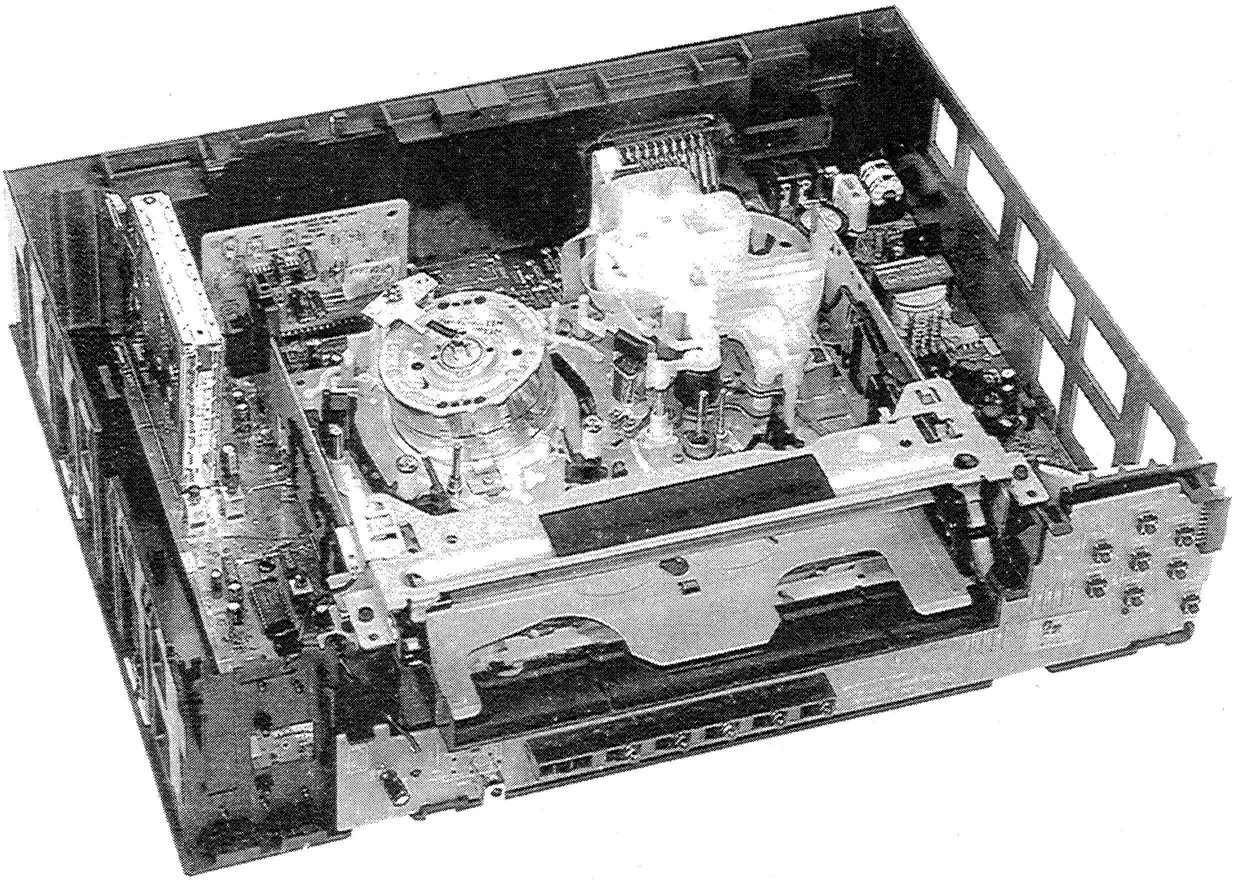
Brandt FERGUSON **NORDMENDE** SABA **TELEFUNKEN** **THOMSON**

V20651

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R 6000 MONO



⚠

WARNING :	*Before servicing this set read the safety recommendations.*
ATTENTION :	*Avant toute intervention sur cet appareil, lire les recommandations de sécurité.*
ACHTUNG :	*Bei jedem Eingriff im Gerät, die Sicherheitsvorschriften beachten.*
ATTENZIONE :	*Prima di intervenire sull'apparecchio, leggere le norme di sicurezza.*
IMPORTANTE :	*Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Code : 350 411 70 - 0697 - 25,7M - R6000 MONO

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⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) durch nicht normengerechte Teile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione degli elementi di sicurezza (marcati con il segno ⚠) con componenenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La subtitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

⚠ Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.

⚠ Ne pas retirer les modules lorsqu' ils sont sous tension.
N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolement.

⚠ Module nicht bei eingeschaltetem Gerät entfernen !
Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

⚠ Non scollegare i moduli quando sono alimentati!
Intraprendere riparazioni sulla sezione alimentatore solo con trasformatore isolante.

⚠ No desconectar los módulos cuando están activados.
Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

TECHNICAL DATA AND COMPOSITION OF VIDEO RECORDERS - CARACTERISTIQUES TECHNIQUES ET COMPOSITION DES MAGNETOSCOPES - TECHNISCHE DATEN UND ZUSAMMENSETZUNG VIDEORECORDERS - CARATTERISTICHE TECNICHE E COMPOSIZIONE VIDEOREGISTRATORI - CARACTERISTICAS TECNICA Y COMPOSICIÓN DE LOS VÍDEOS

• Power requirement: Alimentation: Netzeil: Alimentazione: Alimentación:	220 - 240 V ± 10% 50/60Hz	• 4 Heads Helical Scan system: 4 têtes video: 4 Video-Köpfe: 4 Testine video 4 Cabezas video:	* / **	• Consumption: Consommation: Leitstungsaufnahme: Consumo: Consumo:	17 W 4,8 W STD-BY
• Programming: Programmation: Timer: Programmazione: Programación:	**SHOWVIEW**	• 2 Heads Helical Scan system: 2 têtes video: 2 Video-Köpfe: 2 Testine video 2 Cabezas video:		• Sound: Son: Ton: Suono: Sonido:	Mono
• Tape speed: Vitesse de défilement: Bandgeschwindigkeit: Velocitá del nastro: Velocidad de la cinta:	SP SP/LP * SP/LP/SLP **	• Tape format: Format video: Video-system: Formato video: Formato vídeo:	VHS	• Power save: Sécurité secteur: Gangreserve: Sicurezza alimentazione: Seguridad red:	30 min.

SP = 23,39 mm/sec. LP = 11,70 mm/sec. SLP = 33,35 mm/sec. (Only NTSC PB)

For service information on the deck mechanism see the separate publication " R 4000 SERIES MECHANICAL ADJUSTMENTS " and " R 4000 DRUM DISASSEMBLY / ASSEMBLY SERVICE MANUAL "

Pour toute intervention ou réglage sur la partie mécanique, se reporter au FASCICULE MECANIQUE R 4000 ainsi qu'à son additif: " DEMONTAGE DU TAMBOUR SUR LES MAGNETOSCOPES EQUPES DU CHASSIS R4000 "

Informationen über mechanische Einstellungen entnehmen Sie bitte dem Handbuch " Mechanische Einstellungen R4000 "

Ulteriori informazioni sulla meccanica si possono essere trovare nelle seguenti pubblicazioni: "SERIE R4000 REGOLAZIONI MECCANICHE" e "R4000 MANUALE DI SERVIZIO PER IL DISASSEMBLAGGIO E ASSEMBLAGGIO DEL TAMBURO".

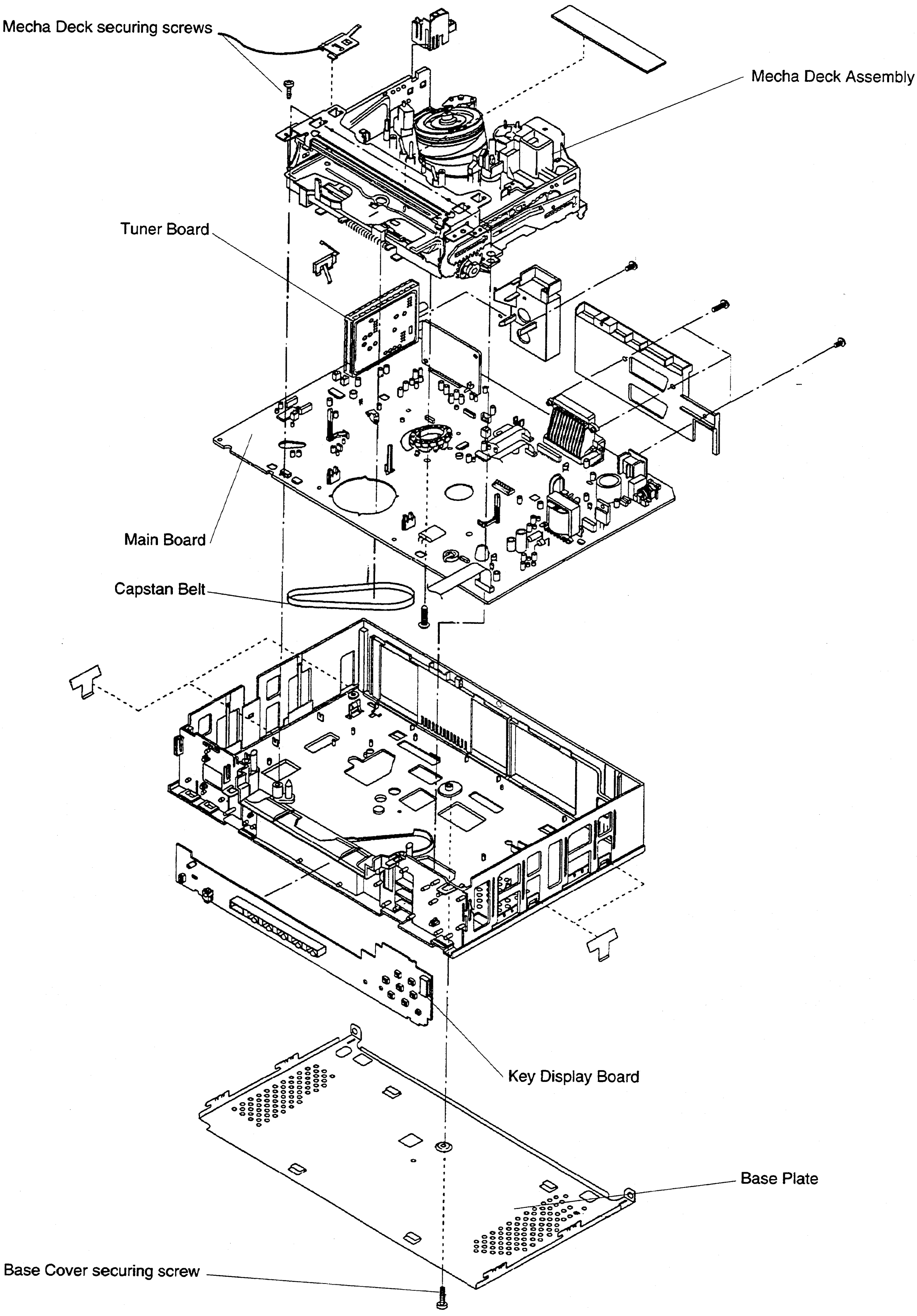
Para información de servicio técnico sobre el mecanismo de la platina, consulte la documentación separada "AJUSTES MECANICOS SERIES R4000" y "MANUAL DE SERVICIO ENSAMBLAJE DEL TAMBOR R4000".

	SCHEMATIC DIAGRAMS AND PCBs (Pages)								
Reference	Number of SETUP 14 Digits	Interconnexions diagrams	Main PCB	POW /IF/TU	Main Servo	Main Video	I/O interface	Secam	KDB/FCB
THOMSON									
VP 2701	18128400B19103	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 21 to 24
VP 2750	02108444B09103	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 21 to 24
VP 4701 **	18128A00B19183	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 21 to 24
VP 4750 **	02108E44B09183	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 21 to 24
TELEFUNKEN									
M 9720 * *2 heads*	18128800319183	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	16 29 to 32
SABA									
VR 8020	18028400719103	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	15 33 to 36
VR 8023	18128400B19103	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 25 to 28
VR 8027	02108404B09103	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 25 to 28
VR 8043 **	18128A00B19183	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 25 to 28
VR 8047	02108E04B09183	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 25 to 28
BRANDT									
VK 231 PS **	0100840440110B	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	15 17 to 20
VK 431 PS **	01008E0440118B	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	15 17 to 20
FERGUSON									
FV 200 LV * *2 heads*	79018800789183	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	15 x to x
FV 201 LV * *2 heads*	79218808B8B383	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	16 x to x
FV 202 LV **	79218A08B8B383	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	16 x to x

Abbreviations / Abreviations / Abkürzungen / Abbreviazioni / Abreviaciones

AC	Alternating Current
ACC	Automatic Colour Control
ACK	Automatic Colour Killer
AD.REF	Analog/Digital Converter Reference
AE	Audio Erase
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
A_IF	Audio IF
ALC	Automatic Level Control
AMP	Amplifier
APC	Automatic Phase Control
AP.CONT	Aperture Control
AV	Audio-Video
A/V SWP	Audio/Video Switching Point (DRUM FF)
B.EMPH	Burst Emphasis
B.DEEMPH	Burst Deemphasis
BG	Burst Gate
BID	Burst Identification
BLK	Blanking
BPF	Band Pass Filter
CAP	Capstan
CBC	Cable Box Control (Satellite Control)
CCD	Charge Coupled Device
CH	Channel
CFG	Capstan Frequency Generator
CLK	Clock
COMP	Comparator
CONV	Converter
CPWM	Capstan Pulse Width Modulation
C-REG	Capstan Regulation
CR	Colour Rotary
CS	Chip Select
CSYNC	Composite Synch
CTL	Control
DC	Direct Current
D.LIM	Double Limiter
DEEMPH	Deemphasis
DET	Detector
D-FG	Drum Frequency Generator
DFF	Drum Flip Flop
DIF.EQ	Differential Equalizer
DIG	Digital
DLY	Delay
DOC	Drop Out Compensation
E-E	Electronic-Electronic
EMPH	Emphasis
ENV	Envelope
EP	Extended Play
EQ	Equalizer
F.E	Full Erase
F.REW	Fast Rewind
F.FWD	Fast Forward
F/R	Forward/Rewind
FCB	Front Connection Board
FF	Fast Forward
FG	Frequency Generator
FMCI	FM Carrier Interleave
FWD	Forward
GND	Ground
GCA	Gain Controlled Amplifier
HASEL	Head Amplifier Select
HAB	Head Amplifier Board
HD	Horizontal Synch Pulse
HPF	High Pass Filter
I.R	Infra Red
ID	Identification
INP/IN	Input
KDB	Key Display Board
LIM	Limiter
LP	Long Play
LPF	Low Pass Filter
MESECAM	Middle East Secam
NC	Noise Canceller
OSD	On Screen Display
PB	Play Back
PB_C	Play Back Chroma
PCB	Printed Circuit Board
PDC	Program Delivery Control
PG	Pulse Generator
PH	Pseudo Horizontal Synch
PIF	Picture IF
PLL	Phase Locked Loop
PS	Phase Switch
PV	Pseudo Vertical Synch
PWM	Pulse Width Modulation
REC	Record
REC_C	Record Chroma
REW	Rewind
REV	Reverse
SCL	Serial Clock
SDA	Serial Data
SEC	SECAM
SU REEL	Supply Reel
SMPS	Switch Mode Power Supply
SP	Standard Play
SS	Synch Separator
SW	Switch
TU REEL	Take Up Reel
TMB	Terminal Board
VCA	Voltage Controlled Amplifier
VCO	Voltage Controlled Oscillator
VCR	Video Cassette Recorder
VD	Supply Voltage Digital
VE	Voltage (Ever)
V_ENV	Video Envelope
V_IF	Video IF
VS	Voltage (Switched)
VM	Motor Voltage (Drum & Loading motor)
VMC	Motor Voltage (Capstan motor)
VPS	Video Program System
W/D	White/Dark
Y/C	Luminance/Chrominance

VIDEO RECORDER OVERVIEW - LOCALISATION DES ELEMENTS - GERÄTE EXPLOSIONSZEICHNUNG - VISIONE GENERALE DELL'APPARECCHIO - VISTA AMPLIADA DEL CONJUNTO


Mecha Deck securing screws
Mecha Deck Assembly
Tuner Board
Main Board
Capstan Belt
Key Display Board
Base Plate
Base Cover securing screw

GB 1. Service Notes

1.1 Disassembly

1.1.1 Top cover

a) Remove 5 securing screws (0300) from the back of the chassis frame (0010).
b) Slide the top cover backwards and gently lift off.

1.1.2 Front panel

a) Remove two securing screws (0230) from each side of the cassette housing.
b) Disengage the front panels four top securing tabs and the two bottom securing tabs.
c) Pull the frontpanel forwards and downwards to remove it.
Note: During re-installation of the front panel, the cassette door flap lever must be positioned behind the activator lever, on the right-hand side of the cassette holder (hold the flap in a hotizontal position while engaging the front panel).

1.1.3. Key Display Board.

a) Disconnect flat wire connectors BK014 and BK002.
b) Remove earth plate (0058M) attached to the left-hand side of the cassette holder.
c) Disengage three securing tabs on the upper edge of the PCB, tilt the KDB forwards and lift the PCB out of the main chassis.

1.1.4. Bottom Plate.

a) Remove the single fixing screw (0275).
b) Disengage the main chassis location clip from the bottom plate (a square cutout adjacent to the fixing screw).
c) Slide the bottom plate backwards and carefully lift off.

1.1.5. Main Assembly.

a) Remove the two front securing screws (0080) on each side of the mechadeck (0600).
b) Remove a single securing screw (0063M) adjacent to the power input socket.
c) Ensure that the mechadeck is in the loaded position.
d) Disengage the main chassis fixing frame tabs, two along the right-hand edge, one at the rear of the left-hand edge and four along the back panel.
e) Carefully lift out the main assembly from the chassis frame.

1.1.6. Mechadeck.

a) Disconnect flat wire connector at BT002A from the Cam Loading Motor assembly.
b) Disconnect flat wire connector at BS031A from the ACE head assembly.
c) Disengage the flat wire connector at BV001 on the Main Board from the Drum assembly.
d) Turnover the Main Assembly and place on a clean surface.
e) Remove the single securing screw (U501A) in the center of the mechadeck.
f) Remove the Drive Belt (B850).
g) Disengage the four plastic fixing tabs and carefully lift off the Main Board.

1.1.7. Back Panel.

a) Remove two SCART socket securing screws (0071M).
b) Carefully lift off the back panel.

1.1.8. Tuner Holder.

a) Remove single securing screw (0054).
b) Disengage the two plastic securing tabs and remove the tuner holder from the Tuner Module.

1.2. Service Adjustments.

1.2.1. KDB Software Set-up.

The hardware configuration used by the KDB processor is factory set and stored in an E2PROM, IT004. Therefore if IT004 is replaced, then the hardware configuration must be re-entered in the following manner:-
a) Disconnect the VCR from the mains supply.
b) Press and Hold the "-" and "+" keys on the front panel of the VCR and reconnected the mains supply (For VCR which do not have these keys use the "STOP", "PLAY" and "STANDBY" keys instead).
c) Release the "-" and "+" keys.
d) On the TV screen will be displayed a 14 digit number which represent the actual set-up values for the particular Brand/Model of VCR. These numbers can be found on page 2 of this Service Manual.
e) The first digit to be modified will flash, it's value can be incremented by pressing the number 1 key on the RCU in the range of 0 to F.
f) To select the next digit to be modified, press the number 2 key on the RCU. Once all 14 digits have be modified the first digit will again start to flash.
g) To STORE the new settings, press the "STOP" key on the RCU. It takes a few seconds to initialize the E2PROM, during this initialization period the display will remain dark.
h) To "EXIT" the Service Set-Up Mode without saving the new values, press the "EXIT or STANDBY" key on the RCU.
The "FAST-FORWARD" key on the RCU is used to select the second page of the Service Set-Up Mode, this page introduces the Auto Diagnostic functions which are explained in more detail in section 1.3.

Important Note:
After modifying the value of the 14 digit number in the Service Set-Up Mode, it is necessary to carryout the HEAD SWITCHING POINT adjustment procedure as detailed in section 1.2.2.

1.2.2. Head Switching Point.

a) Insert a protected alignment test cassette into the VCR.
The VCR will automatically enter the PLAYBACK mode.
b) When the VCR display shows "PLAY E - - - - ", press the "STATUS" key on the RCU.
c) Next simultaneously press the "+", "-" and "PLAY" keys on the front panel of the VCR.
The display will change to ADJ.
d) Allow the VCR to stay in the PLAYBACK mode for several seconds and then terminate the adjustment routine by pressing the "PLAY" key on the front panel of the VCR (see sub section 2.2.6. of the electrical adjustments on page 9 of this service manual).

1.2.3. 16MHz Clock Adjustment.

To compensate for 16MHz crystal and circuitry errors, "Offset" information is calculated and stored in the E2PROM. This information is produced by comparing the Video Sync signal frequency with the divided down 16mhz oscillator frequency, the adjustment procedure is as follows:-
This adjustment procedure must be carried without a cassette loaded in the VCR.
a) Connect a terrestrial aerial to the VCR and tune to a PAL/Secam 50Hz signal.
b) Next simultaneously press the "PLAY", "+" and "-"keys on the front panel of the VCR (or use service code 08H (Adr 02) form the Service RCU) to activate the adjustment procedure.
c) Wait for 30 seconds (for calculation and storage in the E2PROM), to terminate the adjustment procedure "insert" a video cassette and then eject the cassette.

1.3. Auto Diagnostic.

When a mechanical problem or operating error occurs, a 10 digit number representing the malfunction is stored in the E2PROM. This number will be displayed on the OSD TV screen when switching "ON" the VCR, when analyzed it will assist in finding a solution to the problem encountered.

1.3.1. Error Message Display.

There are two methods of displaying the error message, these are as follows:-
a) Enter the "SERVICE SET UP Mode" (see sub section 1.2.1. KDB Software Set Up) and press the >> FAST FORWARD << key on the RCU.
b) Whilst the VCR is in the "STANDBY" or "STOP" mode, press and hold the "ERASE" key on the RCU for approximately 10 seconds.

1.3.2. Interpretation of Error Message.

The meaning of the various error message code digits is given in the table below.

Number of digit	Meaning	Value
1 and 2	**Target mechadeck and current mechadeck positions**	**1 - Wind 2 - Stop 3 - Standby 3 - Play 4 - Rev 5 - Loading/Unloading 6 - Off 7 - Eject F - Initial**
3 and 4	**Task servo is performing**	**00 - Stop 01 - FRew 02 - FF 04 - Play 11 - Rev 12 - Cue 44 - Record 84 - Still C4 - Rec Pause 40 - Rec/Rec P 10 - Search mode**
5,6,7 and 8	**Task active prior to abnormal off**	**bit 0**
	Normal	**0 0 0 0**
	Record	**0 0 0 1**
	Step	**0 0 0 4**
	Off	**0 0 0 8**
	Eject	**0 0 1 0**
	Stop	**0 0 2 0**
	Capbrake	**0 0 4 0**
	Initial	**0 0 8 0**
	Endless Record	**0 2 0 0**
	Endless Play	**0 4 0 0**
	Continuous	**0 8 0 0**
	Wind	**1 0 0 0**
	Search	**2 0 0 0**
	Still	**4 0 0 0**
	Play	**8 0 0 0**
9 and 10	**Abnormal flags**	**81 - Drum 82 - Left Reel 84 - Right Reel 88 - Task incomplete**

Ⓕ 1. Instructions de maintenance

1.1 Démontage

1.1.1 Coffret supérieur

a) Enlever les 5 vis (0300) de la façade arrière (0010).
b) Tirer le coffret supérieur légèrement vers l'arrière et le soulever.

1.1.2 Façade

a) Enlever les 2 vis (0230).
b) Dégager les 2 crochets du chassis, ainsi que les 4 de la façade.
c) Tirer la façade.

1.1.3 Platine de commandes (KDB)

a) Débrancher les connecteurs BK014 and BK002 de la KDB (0210).
b) Retirer le blindage (0058M) accroché à la mécanique.
c) Dégager les 3 crochets du dessus de la KDB, incliner la KDB vers l'avant et tirer pour la sortir du chassis.

1.1.4 Blindage inférieur

a) Enlever la vis (0275).
b) Appuyer sur les cotés du chassis en allant vers le bas (dans les ouvertures du blindages).
c) Faire glisser vers le bas et tirer le blindage (0260).

1.1.5 Ensemble platine principale

a) Enlever les 2 vis (0080) des cotés de la mécanique (0060).
b) Enlever la vis (0063M) près de l'alimentation.
c) S'assurer que la mécanique (0060) est en position chargée.
d) Dégager les 4 crochets du panneau arrière du chassis.
e) Dégager les 2 crochets du coté droit du chassis.
f) Dégager le crochet arrière gauche du panneau arrière.
g) Sortir la platine principale avec la mécanique.

1.1.6 Mécanique

a) Débrancher le cable (BT002A) de la platine moteur (B435).
b) Débrancher le cable (BS031A) de la tête ACE (G480).
c) Débrancher le connecteur (BV001) et sur la platine principale le cable HAB (BB03) du tambour.
d) Mettre l'ensemble platine principale (0050) le haut vers le bas.
e) Enlever la vis (U501A) au centre de la mécanique.
f) Enlever la couroie (B850).
g) Dégager les 4 crochets de la mécanique et soulever la platine principale.

1.1.7 Panneau arrière

a) Enlever les 2 vis (0071M) du cache arrière.
b) Soulever le cache arrière.

1.1.8 Support tuner

a) Enlever la vis (0054) du support tuner.
b) Dégager les 2 crochets du support tuner du tuner (0010M).
c) Tirer le support tuner.

1.2 Réglages du mode service

1.2.1 Mode service platine KDB

Il est nécessaire d'informer le microprocesseur de la configuration en présence. Cela est effectué en usine et les valeurs sont stockées dans l'EEPROM.
1. Déconnecter le magnétoscope du secteur.
2. Maintenir pressées les touches «-» et «+» et connecter le magnétoscope au secteur. (Pour ceux ne disposant pas de ces touches, utiliser les touches «STOP», «PLAY» et «STANDBY»). Relacher les touches «-» et «+».
Sur l'écran (OSD), 14 digits indiquent les valeurs du mode service. Presser 1,3,4,5,6,7,8,9,0 pour augmenter la valeur de 0 to F et presser 2 pour aller au numéro suivant.
Dans ce mode SERVICE SET UP, certaines valeurs peuvent être entrées en fonction des caractéristiques spécifiques. Le nombre de 14 chiffres correspondant à votre appareil est donné dans le tableau page 2. Le digit à valider clignote à l'écran. Les entrées sont faites par les touches de la télécommande. Après l'entrée des 14 digits, le premier digit clignote de nouveau. Mémoriser les nouvelles valeurs en pressant la touche STOP de la télécommande. Vous pouvez également quitter le mode SERVICE SET UP sans mémoriser les nouvelles valeurs. Pour ce faire, presser la touche « E » ou « OFF » de la télécommande.
Si vous avez decidé de mémoriser les nouveaux réglages, il peut s'écouler quelques secondes pour initialiser l'EEPROM. Pendant ce temps, l'affichage reste noir.
La touche AVANCE RAPIDE (>>) est utilisée pour accéder à la seconde page du mode Service.Cette page introduit la fonction «Auto diagnostique». Vous trouverez plus de détails à cè sujet dans le paragraphe 1.3.

Note importante :
Après la modification des valeurs du mode Service, un nouveau réglage du point de commutation des têtes est nécessaire.

1.2.2 Point de commutation des têtes

Introduire une cassette test protégée dans le magnétoscope. Le mode lecture est automatiquement positionné. Lorsque l'affichage indique «LECT. E---» presser la touche «STATUS» sur la télécommande. Presser ensuite, simultanément, les touches «+»,«-» puis «LECT» sur la façade (Maintenir ces trois touches pressées). l'affichage indique "ADJ". Le magnétoscope va rester en mode LECT. . Après quelques secondes, arrêter le réglage en pressant sur la touche «LECT» de la façade. (Voir § 2.2.4 des réglages électriques)

1.2.3 Ajustement de l'horloge de 16 MHz

Pour compenser la tolérance du quartz de 16 MHz, l'information de compensation est mémorisée dans l'EEPROM. L'ajustement est réalisé par comparaison de la fréquence d'horloge de 16 MHz avec le la fréquence du signal Sync. Vidéo. La valeur de compensation sera mémorisée dans l'EEPROM.
Connecter l'antenne à l'entrée du tuner et ajuster sur un canal PAL/Secam avec un signal de 50 Hz. Vérifier qu'aucune cassette n'est introduite dans le magnétoscope. Presser les touches « PLAY », « + » and « - ». Ou utiliser le code 08H (Adr 02) du mode service de la télécommande. L'écran VFD indique "-ADJ", le réglage est activé. Attendre 30 secondes (pour calculer et mémoriser dans l'EEPROM). Insérer une cassette pour arrêter le processus et éjecter la cassette.

1.3 Auto diagnostique

Lorsqu'il se produit un incident mécanique où suite à une erreur de manipulation, un nombre de 10 chiffres representant ce mauvais fonctionnement est mémorisé dans l'EEPROM.
L'affichage à l'écran de ce nombre peut permettre, par son analyse, de résoudre le problème rencontré.

1.3.1 Affichage du message d'erreur

Le message d'erreur peut être affiché de 2 façons :
a) Lorsque la page «SERVICE SETUP» est affiché à l'écran, appuyer sur la touche Avance Rapide «>>» de la télécommande.
b) En mode STOP ou STANDBY, lorsqu'il n'y a aucun affichage sur l'écran du téléviseur, appuyer sur la touche ERASE pendant au moins 10 secondes.

1.3.2 Interprétation du message d'erreur

La signification des différents chiffres composant le message d'erreur est donnée dans le bureau ci-après.

Numéro du digit	Signification	Valeur
1 et 2	Fonction demandée et position de la mécanique au moment de l'incident	1 - Av. ou Ret. rapide 2 - Stop 3 - Standby 3 - Lect. 4 - Lect. Ar. 5 - Charg ./ Décharg. 6 - Arrêt (en butée déchargé) 7 - Eject. F - Initialisation
3 et 4	Fonction réalisée par le µP (Gestion / Asserv.)	00 - Stop 01 - Retour rapide 02 - Avance rapide 04 - Lect. 11 - Lect Ar. 12 - Rech. / Lect. 44 - Enreg. 84 - Arrêt sur image C4 - Pause Enreg. 40 - Enreg./Pause Enreg. 10 - Recherche
5,6,7 et 8	Fonction en cours avant anomalie	bit 0
	Normal	0000
	Enreg.	0001
	Image / image	0004
	Arrêt (en butée déchargé)	0008
	Eject.	0010
	Stop	0020
	Frein de cabestan	0040
	Initialisation	0080
	Enreg. en boucle	0200
	Lect. en boucle	0400
	Enreg. ou Lect. en boucle	0800
	Av. ou Rect. rapide	1000
	Recherche	2000
	Arrêt sur image	4000
	Lect.	8000
9 et 10	Indication de l'anomalie	81 - Tambour 82 - Porte bobine gauche 84 - Porte bobine droit 88 - Fonction incomplète

Ⓓ 1. Service-Hinweise

1.1 Demontage des Gerätes

1.1.1 Gehäuse

a) 5 Schrauben an der Rückseite des Gerätes herausdrehen.
b) Das Gehäuseoberteil leicht nach hinten ziehen und anheben.

1.1.2 Frontblende

a) Die beiden Schrauben herausdrehen.
b) Die beiden Kunststoffzungen an der Bodenplatte und 4 Kunststoffzungen von der Frontblende anheben.
c) Frontblende abnehmen.

1.1.3 Bedienteil-Platte

a) Die Stecker BK014 und BK002 herausziehen.
b) Die an der Mechanik befestigte Masseplatte abnehmen.
c) Die drei Kunststoffzungen oben auf der Bedienteil-Platte anheben und die Platte nach vone/oben aus dem Chassis nehmen.

1.1.4 Bodenplatte

a) Die Schraube herausdrehen.
b) Die Verriegelung des Chassis nach unten drücken (in der viereckigen Öffnung der Bodenplatte).
c) Die Bodenplatte nach hinten drücken und herausziehen.

1.1.5 Versorgungsteil

a) Die beiden Schrauben an beiden Seiten der Mechanik herausdrehen.
b) Die Schraube neben dem Netzanschluß herausdrehen.
c) Sicherstellen, daß sich die Bedienteil-Platte in Ladeposition befindet.
d) Die vier Kunststoffzungen der Rückplatte des Chassis anheben.
e) Die zwei Kunststoffzungen der rechten Seitenplatte des Chassis anheben.
f) Die Kunststoffzunge am hinteren linken Ende der Rückplatte anheben.
g) Das Versorgungsteil mit der Mechanik herausziehen.

1.1.6 Hauptleiterplatte komplett mit Laufwerk

a) Das Kabel BT002A von der Antriebsmotorplatte trennen.
b) Das Kabel BS031A vom ACE-Kopf trennen.
c) Den Anschluß BV001 (Kopftrommel) des HAB-Kabels BB03 von der Hauptplatine trennen.
d) Den Versorgungsteil auf den Kopf stellen.
e) Die Schraube in der Mitte der Mechanik herausdrehen.
f) Den Antriebsriemen entfernen.
g) Die vier Kunststoffzungen der Mechanik anheben und Hauptplatine herausheben.

1.1.7 Rückplatte

a) Die beiden Schrauben der Rückplatte herausdrehen.
b) Die Rückplatte abnehmen.

1.1.8 Tuner-Halterung

a) Die Schraube der Tuner-Halterung herausdrehen.
b) Die beiden Kunststoffzungen der Tuner-Halterung am Tuner anheben.
c) Die Tuner-Halterung herausziehen.

1.2 Service-Einstellungen

1.2.1 Einrichten der Bedienteil-Software

Es ist notwendig, dem Bedienteil-Prozessor die vorhandende Hardware-Konfiguration anzugeben. Diese wird im Werk vorgenommen und im EEPROM abgespeichert.
1. Den Videorecorder vom Netz trennen.
2. Die Tasten „-“ und „+“ gedrückt halten und dabei den Videorecorder am Netz anschließen. (Sind diese Tasten nicht vorhanden, sind „STOP», „PLAY“ und „STANDBY“ an deren Stelle au verwenden.)
Die Tasten „-“ und „+“ loslassen.
Auf dem TV-Schirm werden 14 Ziffern angezeigt, welche die aktuellen Voreinstellungen angeben.
Die Tasten1, 3, 4, 5, 6, 7, 8, 9, 0 drücken, um den Service-Datenwert von 0 zu F zu erhöhen, und 2 drücken, um zur nächsten Nummer überzugehen.
In diesem Service-Einrichtungsmodus können einige dem Videorecordertyp entsprechende Einstellungen vorgenommen werden. Die Ihrem Gerät entsprechende Nummer aus 14 Ziffern finden Sie in der Tabelle auf Seite 3. Die jeweils einzustellende Ziffer blinkt auf dem Bildschirm. Die Eingabe erfolgt mit den Tasten der Fenbedienung. Nachdem alle 14 Ziffern eingegeben wurden, blinkt wieder die erste Ziffer. Zum Abspeichern der neuen Einstellungen drücken Sie die Taste „STOP“ der Fernbedienung. Sie können den Service-Modus auch ohne Abspeichern verlassen. Zu diesem Zweck drücken Sie die Taste „E“ oder „OFF“ der Fernbedienung.
Wenn Sie die neuen Werte abgespeichert haben, dauert es einige Sekunden, bis diese in das EEPROM geschrieben sind. Während dieser Zeit bleibt die Anzeige dunkel.
Mit der Taste „Schneller Vorlauf“ gelangt man zur Seite 2 des Service-Modus. Diese Seite enthält die Funktion Auto Diagnose. Näheres dazu finden Sie im Abschnitt 1.3.

Wichtiger Hinweis:
Nach den Einstellungsänderungen im Service-Mode ist es erforderlich, den Kopftrommel-Umschaltpunkt neu zu setzen.

1.2.2 Kopf-Trommel-Umschaltpunkt

Legen Sie eine schreibgeschützte Meßkasette in das Videogerät. Die Wiedergabe startet automatisch. Wenn «START. E---» angezeigt wird, drücken Sie die «STATUS» Taste auf der Fernbedienung. Drücken Sie gleichzeitig die Tasten «+», «-» danach «PLAY» auf der Frontseite (Halten Sie die drei Tasten fest). Es wird “EINST.“ angezeigt. Das Videogerät bleibt im Wiedergabebetrieb. Beenden Sie nach eingen Sekunden diese Einstellung durch Drücken von «PLAY» auf der Frontseite.
(Sehen Sie unter §2.2.4 betr. der elektrischen Einstellungen nach)

1.2.3 Einstellung der 16 Mhz-Uhr

Zur Toleranzkompensierung des 16 Mhz-Quarzes werden im EEPROM Zeitdifferenzinformationen gespeichert. Die Einstellung erfolgt durch Vergleich der heruntergeteilten 16 Mhz mit der Video Sync. Die Differenz wird im EEPROM abgelegt.
Schließen Sie die Antenne am Tunereingang an und stellen Sie einen PAL/Secam-Kanal ein. Überprüfen Sie, daß der Kassettenschacht leer ist. Drücken Sie die Tastenkombination „PLAY“, „+“ und „-“. Oder verwenden Sie den Service-Code 08H (Adr 02) an der Fernbedienung. Auf der VFD-Anzeige erscheint
„-ADJ“, und die Einstellung ist aktiviert. Warten Sie 30 Sekunden (für die Berechnung und das Abspeichern auf dem EEPROM). Legen Sie zum Stoppen des Vorgangs eine Kassette ein und werfen Sie diese wieder aus.

1.3.1 Anzeige einer Fehlermeldung

Die Fehlermeldung kann auf 2 Arten erfolgen:

a) Wenn die Seite «SERVICE EINSTELLUNGEN» auf dem Schirm ist, drücken Sie «<< Schneller Vorlauf «>>» auf der Fernbedienung.

b) Im **STOP oder STANDBY Modus**, wenn keine Anzeige auf dem Schirm ist, drücken Sie mindestens 10 Sekunden auf LÖSCHEN.

1.3.2 Interpretation der Fehlermeldung

Die Bedeutung der verschiedenen Ziffern, welche die Fehlermeldung darstellen, wird in nachstehender Tabelle gegeben.

Ziffer	Bedeutung	Wert
1 und 2	Ziel-Hauptleiterplatte und deren aktuelle Einstellungen	1 - Aufspulen 2 - Stop 3 - Standby 3 - Wiedergabe 4 - Rev 5 - Laden/Entladen 6 - Ausschalten 7 - Auswerfen F - Anfang
3 und 4	Ausgeführte Servo-Funktion	00 - Stop 01 - Schneller Rücklauf 02 - Schneller Vorlauf 04 - Wiedergabe 11 - Rev 12 - Cue 44 - Aufnahme 84 - Standbild C4 - Aufnahmepause 40 - Aufn./Aufn.pause 10 - Suchlauf
5, 6, 7 und 8	Funktion vor außsergrwöhnlichem Ausschalten	bit 0
	Normal	0 0 0 0
	Aufnahme	0 0 0 1
	Schritt	0 0 0 4
	Aus	0 0 0 8
	Auswurf	0 0 1 0
	Stop	0 0 2 0
	Capbrake	0 0 4 0
	Anfang	0 0 8 0
	Endlosaufnahme	0 2 0 0
	Endloswiedergabe	0 4 0 0
	Fortlaufend	0 8 0 0
	Aufspulen	1 0 0 0
	Suchlauf	2 0 0 0
	Standbild	4 0 0 0
	Wiedergabe	8 0 00
9 und 10	Außergewöhnliche Indikatoren	81 - Trommel 82 - Linke Spule 84 - Rechte Spule 88 - Funktion nicht beendet

Ⓘ 1. Note di servizio

1.1 Disassemblaggio

1.1.1 Coperchio superiore

a) Togliere le 5 viti ubicate sulla parte posteriore del VR.
b) Far scorrere in avanti il coperchio e sollevarlo delicatamente.

1.1.2 Pannello frontale

a) Svitare le due viti.
b) Liberare i due ganci inferiori e i quattro ganci superiori del frontale.
c) Estrarre il frontale.

1.1.3 Key Display Board

a) Scollegare i connettori BK014 e BK002 del Key Display Board.
b) Rimuovere il collegamento di massa con la meccanica.
c) Liberare i tre ganci superiori del KDB, togliere la piastra dopo averla spostata verso l'alto.

1.1.4 Coperchio inferiore

a) Togliere la vite.
b) Premere verso il basso la nervatura del telaio (intemamente all'apertura quadrata).
c) Far scorrere verso il basso e togliere il coperchio inferiore.

1.1.5 Insieme piastra principale e meccanica

a) Togliere le due viti poste ai lati della meccanica.
b) Togliere la vite vicina alla presa di alimentazione.
c) Accertarsi che la piastra meccanica sia in posizione di caricamento.
d) Liberare i quattro ganci del pannello posteriore dal telaio.
e) Liberare i due ganci sul lato destro dal telaio.
f) Liberare il gancio sulla parte inferiore sinistra del pannello posteriore.
g) Rimuovere l'insieme piastra principale con meccanica.

1.1.6 Meccanica

a) Scollegare il connettore BT002A del motore funzione controllo.
b) Scollegare il connettore BS031A della testina ACE.
c) Sganciare il connettore BV001 tra la piastra principale e il cavo HAB (BB03) del tamburo testine.
d) Capovolgere l'insieme piastra principale / meccanica.
e) Togliere la vite al centro della piastra meccanica.
f) Rimuovere la cinghia motore.
g) Liberare i quattro ganci della meccanica e sollevare la piastra principale.

1.1.7 Pannello posteriore

a) Togliere le due viti del pannello posteriore.
b) Sollevare il pannello posteriore.

1.1.8 Supporto del Tuner

a) Togliere la vite del supporto del Tuner.
b) Liberare i due ganci del supporto del Tuner.
c) Estrarre il supporto del Tuner.

1.2 Regolazioni di servizio

1.2.1 Impostare il software KDB

È necessario informare il processore KDB del tipo di configurazione hardware presente. Ciò viene effettuato in fabbrica e le selezioni sono memorizzate nella EEPROM.
1. Scollegare il VTR dalla rete.
2. Premere i tasti i tasti "-" e "+" e collegare il VTR alla rete (sui VCR privi di questi tasti utilizzare invece i tasti "STOP", "PLAY" e "STANDBY").
Rilasciare i tasti "-" e "+".
Sullo schermo OSD (On Screen Display) vengono visualizzate 14 cifre, che rappresentano i valori di impostazione (setup) attuali.
Premere 1, 3, 4, 5, 6, 7, 8, 9, 0 per aumentare il valore dei dati da 0 a F e premere 2 per andare al numero successivo.
In SERVICE SET UP si possono immettere alcuni valori in funzione alle caratteristiche del VR. Il numero composto da 14 cifre che corrisponde al vostro apparecchio viene riportato nella tabella a pag. 3. La cifra sulla quale è possibile intervenire è quella lampeggiante. L'immissione dei dati avviene mediante i tasti del telecomando. Dopo aver immesso tutte le 14 cifre, lampeggerà di nuovo la prima cifra. Memorizzate le nuove regolazioni premendo il tasto STOP sul telecomando. È inoltre possibile uscire dal SERVICE SET UP senza memorizzare le nuove regolazioni. Per fare ciò, premere i tasti "E" oppure "OFF" del telecomando.
Se avete deciso di memorizzare i nuovi parametri, attendere alcuni secondi per l'inizializzazione della EEPROM. Durante questo tempo il Display rimarra buio. Il tasto "FAST FORWARD" viene utilizzato per passare alla seconda pagina del Service Mode. Questa pagina di "Auto diagnosi", viene spiegata dettagliatamente nel paragrafo 1.3.

Importante:
Dopo aver modificato le regolazioni del Service Mode si rende necessaria la regolazione "HEAD SWITCHING POINT" punto di commutazione delle testine.

1.2.2 Punto commutazione testine

Inserire une cassetta test protetta nel videoregistratore. Il VR commuta automaticamente in riproduzione. Quando viene visualizzato il messagio "PLAY. E", premere il tasto STATUS sul telecomando. Premere poi contemporaneamente i tasti "+","-" e quindi il tasto PLAY sul frontale (mantenere premuti questi tre tasti per alcuni secondi). Il display visualizza "ADJ". Il videoregistratore resterà in riproduzione. Dopo alcuni secondi, concludere la regolazione premendo il tasto "PLAY" sul frontale. (Vedere §2.2.4 relavito alle regolazioni elettriche).

1.2.3 Regolazione dell clock o 16 Mhz

Serve a compensare la tolleranza del quarzo. La relativa informazione viene memorizzata nella EEPROM. La regolazione viene effettuata confrontando la frequenza, opportunamente divisa, del quarzo o 16MHz con la frequenza del sincronismi video. Il valore di compensazione viene memorizzato nella posizione EEPROM.
Collegare l'entrata antenna al Tuner e sintonizzarsi su un canale PAL/Secam a 50Hz. Controllare che il vano cassetta sia vuoto. Premere i tasti "PLAY", "+" e "-" oppure utilizzare il codice di servizio 08H (Adr 02) del telecomando di servizio. Quando il display indica "-ADJ" la regolazione è attivata. Attendere 30 secondi (per il calcolo e la memorizzazione nella EEPROM). Inserire una cassetta per interrompere la procedura di regolazione e quindi togliere la cassetta.

1.3 Auto diagnosi

Quando si verifica un problema meccanico oppure un errore di utilizzo viene memorizzato nella EEPROM un numero di 10 cifre corrispondente al malfunzionamento.
Dall'analisi di tale numero sullo schermo si possono ricavare importanti indicazioni utili per la riparazione.

1.3.1 Visualizzazione del messagio di errore

Il messaggio di errore può essere visualizzato nei due modi seguenti:
a) Quando lo schermo visualizza la pagina «SERVICE SETUP», premere il tasto "Avanzamento Veloce" del telecomando.
b) In STOP o STANDBY, quando sullo schermo del televisore non è visualizzato alcun messagio, premere il tasto ERASE e mantenerlo premuto per almeno 10 secondi.

1.3.2 Significato del messagio di errore

Il significato delle varie cifre che costituiscono il messagio di errore viene spiegato nella tabella successiva.

Numero di cifre	Significato	Valore
1 e 2	**Obiettivo della meccanica e attuale posizione meccanica**	**1 - Wind**
		2 - Stop
		3 - Standby
		3 - Play
		4 - Rev
		5 - Caricare/Scaricare
		6 - Off
		7 - Eject
		F - Iniziale
3 e 4	**Compito servo in esecuzione**	**00 - Stop**
		01 - FRew
		02 - Fast Forward
		04 - Play
		11 - Rev
		12 - Cue
		44 - Record
		84 - Still
		C4 - Rec Pause
		40 - Rec/Rec P
		10 - Search mode
5,6,7 e 8	**Funzione altiva prima dell'anomalia**	**bit 0**
	Normale	**0 0 0 0**
	Record	**0 0 0 1**
	Step	**0 0 0 4**
	Off	**0 0 0 8**
	Eject	**0 0 1 0**
	Stop	**0 0 2 0**
	Capbrake	**0 0 4 0**
	Iniziale	**0 0 8 0**
	Registrazione infinita	**0 2 0 0**
	Riproduzione infinita	**0 4 0 0**
	Continuato	**0 8 0 0**
	Wind	**1 0 0 0**
	Search	**2 0 0 0**
	Still	**4 0 0 0**
	Play	**8 0 0 0**
9 e 10	**Indicazione anomalia**	**81 - Tamburo**
		82 - Bobina sinistra
		84 - Bobina destra
		88 - Compito non completato

Ⓔ Instrucciones para Servicio Tecnico

1.1 Desmontaje

1.1.1 Cubierta superior

a) Extraiga los 5 tornillos de la parte trasera del chasis
b) Deslice el chasis hacia atrás y levante la cubierta

1.1.2 Panel frontal

a) Extraiga los dos tornillos.
b) Libere los dos clips de la parte inferior y los cuatro de la parte superior del panel frontal.
c) Saque el panel frontal.

1.1.3 Placa de visualización KDB

a) Desconecte los conectores BK014 y BK002 de la tarjeta Key Display
b) Extraiga la placa del mechadeck
c) Libere los dos clips de la parte superior del KDB, incline la KDB hacia adelante y saque la KDB del chasis.

1.1.4 Placa de la parte inferior

a) Extraiga los tornillos.
b) Pulse el clip del marco del chasis hacia abajo (apertura cuadrada interna de la placa inferior)
c) Deslice hacia abajo y saque la placa inferior.

1.1.5 Extracción de placa principal

a) Extraiga los dos tornillos a ambos lados de la platina mecánica
b) Extraiga los tornillos cerca de la toma de corriente
c) Compruebe que la mecánica está en posición de carga
d) Libere los cuatro clips del panel trasero del chasis
e) Libere los dos clips del lado derecho del chasis
f) Libere un clip del extremo posterior izquierdo del panel trasero.
g) Saque la placa principal con la platina mecánica

1.1.6 Platina mecánica

a) Desconecte el cable (BT002A) de la placa del motor de la unidad
b) Desconecte el cable (BS031A) de la cabeza ACE.
c) Desconecte el conector (BV001) en la placa principal al cable HAB (BB03) del tambor.
d) Coloque la placa principal boca abajo
e) Extraiga el tornillo del centro de la platina mecánica
f) Extraiga la correa de conducción
g) Libere los 4 clips de la platina principal y levante la placa central

1.1.7 Panel posterior

a) Extraiga los dos tornillos del panel posterior
b) Levante el panel posterior

1.1.8 Portasintonizador

a) Extraiga los tornillos del portasintonizador
b) Libere los dos clips del portasintonizador al sintonizador
c) Saque el sintonizador.

1.2 Ajustes de servicio técnico

1.2.1 Configuración del software KDB

Es obligatorio informar al procesador KDB de la configuración de hardware existente. La configuración viene de fábrica y las selecciones se almacenan en el EEPROM.
1. Desenchufe el VTR de la corriente.
2. Mantenga pulsadas las teclas "-" y "+" y enchufe el VTR a la corriente. (Si el vídeo no tiene estas teclas, use las teclas "STOP", "PLAY" y "STANDBY")
Suelte las teclas "-" y "+"
En la visualización en pantalla OSD (On-Screen Display) aparecen 14 dígitos que representan los valores de configuración reales.
Pulse 1,3,4,5,6,7,8,9,0 para aumentar el valor de datos de servicio de 0 a F y pulse 2 para pasar al número siguiente.
En este modo de configuración de servicio técnico (SERVICE SETUP), se pueden efectuar algunas configuraciones específicas de tipo VTR. El número de 14 dígitos que corresponde a su aparato se indica en la tabla de la página 3. El dígito real para su introducción parpadea en la pantalla. Las introducciones se realizan con las teclas del mando a distancia. Una vez introducidos la totalidad de los 14 dígitos, el primer dígito parpadeará de nuevo. Guarde la nueva configuración pulsando la tecla STOP del mando a distancia.
También podrá salir del modo SERVICE SET-UP sin guardar las nuevas configuraciones. Para ello, pulse la tecla "E" u "OFF" del mando a distancia.
Si ha decidido guardar las nuevas configuraciones, la inicialización del EEPROM puede tardar algún tiempo. Durante este periodo el display permanecerá oscuro.
La tecla "FAST FORWARD" se usa para pasar a la segunda página del modo Servicio técnico. Esta página introduce la función de autodiagnóstico, consulte el párrafo 1.3 para más información sobre esta función.

Nota importante: Tras la modificación de las configuraciones en el modo servicio técnico, es necesario ajustar de nuevo el punto de conmutación de cabeza (HEAD SWITCHING POINT).

1.2.2 Punto de commutación de cabeza

Introducir una cinta patrón protegido en la videograbadora. El modo lectura se posiciona automáticamente. Cuando el visualizador indique «PLAY E---» pulse la tecla «STATUS» en el mando a distancia. Enseguida pulsar simultáneamente las teclas «+»,«-» y después «PLAY» en el frontal (Mantener estas tres teclas pulsadas). El visualizador indica «ADJ». El VCR permanecerá en modo PLAY. Después de algunos segundos, interrumpir el ajuste pulsando tecla «PLAY» en el panel frontal. (Véase el punto 2.4.6, de ajustes eléctricos).

1.2.3 Ajuste del reloj de 16 Mhz

Para compensar la tolerancia de cristal de 16 Mhz, se guarda información de Offset en el EEPROM. El ajuste se efectúa comparando la división de frecuencia del reloj de 16 Mhz y la frecuencia de señal de Video Sync. El valor de offset se guardará en el emplazamiento de EEPROM.
Conecte la entrada de antena al sintonizador y sintonice un canal PAL/Secam con señal de 50 Hz. Compruebe que no hay ninguna cinta dentro. Pulse "PLAY" y la combinación de teclas "+" y "-", o use el código de servicio 08H (Adr 02) del mando a distancia de servicio. La visualización VFD muestra "-ADJ" para indicar que el ajuste está activado. Espere 30 segundos (para calcular y guardar en el EEPROM). Inserte un casete para detener el proceso y expulsar el casete

1.3 Auto diagnóstico

Cuando se produce un incidente mecánico o después de un error de manipulación, se memoriza en la EEPROM un número de 10 cifras que representa este mal funcionamiento.
El análisis de este número visualizado en el pantalla puede permitir resolver el problema encontrado.

1.3.1 Visualización del mensaje de error

El mensaje de error puede ser visualizado de 2 maneras:
a) Cuando se visualiza en el pantalla la página «SERVICE SETUP», pulsar la tecla Avance Rápido «>>» del mando a distancia.
b) En **modo STOP o STANDBY**, cuando no hay ninguna visualización en el pantalla del televisor, pulsar la tecla ERASE durante 10 segundos por lo menos.

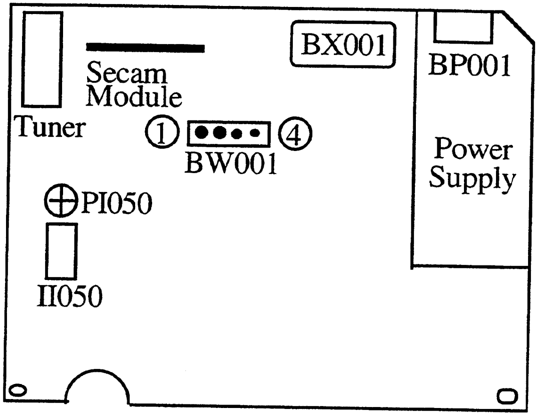
1.3.2 Interpretación del mensaje de error

En el cuadro siguiente se entrega la significación de las diferentes cifras que componen el mensaje de error.

Número de dígito	Significado	Valor
1 y 2	Función solicitada y posición de la mecánica en el momento del fallo	1- Avance 2. Stop 3. Standby 3. Play 4. Rev 5. Carga/Descarga 6. Off 7. Expulsar F. Inicial
3 y 4	Tarea servo ejecutándose	00. Stop 01. Frew 02. FF 04. Play 11. Rev 12. Cue 44. Record 84. Still C4. Rec Pause 40. Rec/Rec P 10. Modo búsqueda
5,6,7 y 8	Tarea activa antes de parada anormal	bit 0
	Normal	0 0 0 0
	Record	0 0 0 1
	Step	0 0 0 4
	Off	0 0 0 8
	Eject	0 0 1 0
	Stop	0 0 2 0
	Freno del capstan	0 0 4 0
	Initial	0 0 8 0
	Grabación infinita	0 2 0 0
	Lectura infinita	0 4 0 0
	Contínuo	0 8 0 0
	Avance	1 0 0 0
	Búsqueda	2 0 0 0
	Parada	4 0 0 0
	Lectura	8 0 0 0
9 y 10	Indicación de la anomalía	81. Tambor 82. Bobina izquierda 84. Bobina derecha 88. Tarea incompleta

2. Electrical adjustments - Réglages électriques - Elektrische Einstellungen - Regolazioni elettriche - Ajustes eléctricos

2.1. Test points and adjustment overview - Emplacement des points test et des réglages - Testpunkt- und Abgleich-Übersicht - Punto test e visione d'insieme delle regolazioni - Punto de prueba y emplazamientos de los ajustes



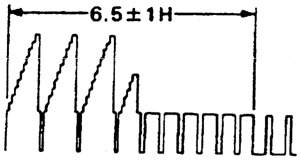
2.2. On screen display (Main board) - OSD: Affichage sur l'écran (Platine principale) - OSD: Hauptleiterplatte - OSD: Visualizzazione su Schermo - OSD: Visualización en la pantalla

N°	Item	Mode & signal	Test equipment	Test point	Description
2.2.1	OSD chroma oscillator		Frequency counter	RT103	Check for 17.734475MHz±650Hz

2.3. Audio signal processing (Main board) - Traitement audio (Platine principale) - Audio Signalverarbeitung - Elaborazione segnale audio - Procesamiento audio

N°	Item	Mode & signal	Test equipment	Test point	Description
2.3.1	Bias oscillator frequency & level	REC (without signal)	Oscilloscope	BS030 pin1-2	Check for 70KHz±4KHz 40Vpp±4V
2.3.2	Bias current	REC (without signal)	Oscilloscope	IS001 pin17-7	Check for 1.4Vpp±0.2V (~) 500±50mVrms $I = V_{PIN17(V_{RMS})} / (RS012+RS013)\Omega$

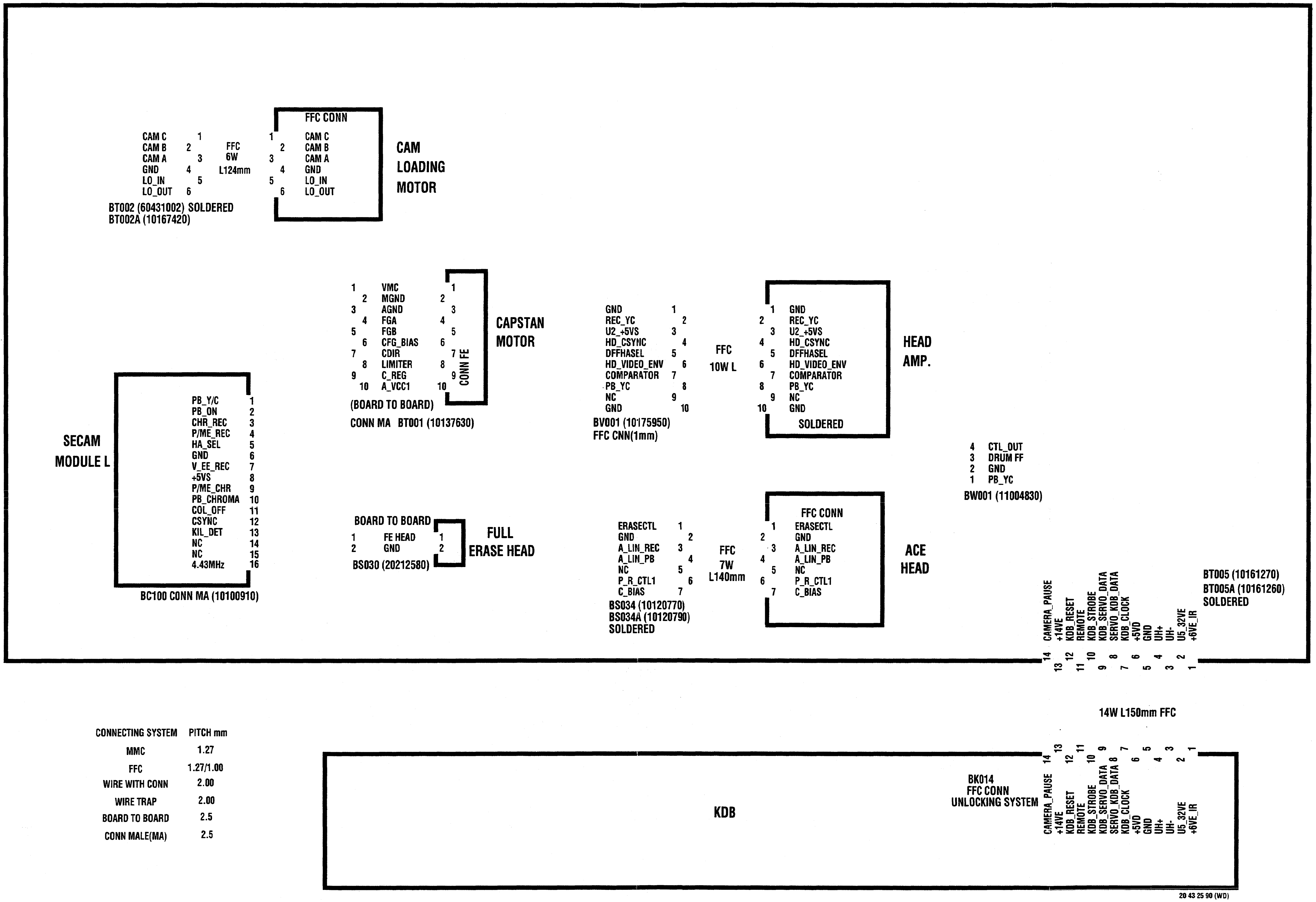
2.4. Measurements Servo Part - Vérifications sur les circuits d'asservissements - Messungen Servoteil - Controlli parte Servo - Verificaciones para parte Servo

N°	Item	Mode & signal	Test equipment	Test point	Description
2.4.1	Oscillator frequency		Frequency counter	IT001 pin 63	Check for 8.0MHz±1250Hz
2.4.2	5V Regulated		Voltmeter	IT001 pin 64	Check for 5.1V±0.3V
2.4.3	Drum FF	PB /REC (SP)	Frequency counter	IT001 pin 89	Check for 40ms±10µs
2.4.4	Capstan FG	PB /REC (SP)	Frequency counter	IT001 pin 44	Check for f= 757Hz±10Hz
2.4.5	CTL signal	PB /REC (SP)	Oscilloscope	IT001 pin 46	Check for f= 25Hz, U= 5Vpp
2.4.6	Head switching point	PB	Dual trace Oscilloscope Trigger ext. BW001 (Drum FF)	BX001 pin 19	1. Insert alignment test cassette. 2. When the display shows «PLAY E----» press the STATUS key on remote control. 3. Press «+» , «-» and «PLAY». 4. Display shows «ADJ». 5. Confirm that head switching point is 6.5 H ± 0.5H before vert. synchro. 6. Stop the adjustment by pressing Play key on the front panel. 

2.5. Video signal processing (Main board) - Traitement video (Platine principale) - Video Signalteil - Elaborazione segnale video - Tratamiento video

N°	Item	Mode & signal	Test equipment	Test point	Description
2.5.1	CVBS EE level	REC PAL grey scale 1Vpp (BX001 pin20)	Oscilloscope	BX001 pin19	Check for VBS = 1.0±0.05Vpp Burst = 300±40mVpp
(Not for all sets)		REC SECAM colour bar (BX001 pin20)	Oscilloscope	BX001 pin 19	Check for magenta bar = 210±20mVpp
2.5.2	White clip and dark clip	REC PAL video signal with 100% white-black (BX001 pin20)	Oscilloscope	IV001 pin 37	Check for white clip = 195%±15% Dark clip = 60%±10%
2.5.4	FM Record current	REC PAL mode (BX001 pin20)	Oscilloscope	TV008 emitter	Check recording level=150mVpp
2.5.5	Y Playback level	PB PAL FM signal modulated with 100% grey scale (BV001 pin8)	Oscilloscope	BX001 pin 19	Check Y playback level = 1.0±0.05Vpp
(Not for all sets)		NTSC PB FM signal modulated with 100% grey scale (BV001 pin8)	Oscilloscope	BX001 pin 19	Check Y playback level = 1.0±0.05Vpp
2.5.6	Chroma playback level	PB PAL FM signal modulated with colour bar (BV001 pin8)	Oscilloscope	BX001 pin 19	Check for PAL burst = 210±40mVpp
(Not for all sets)		PB SECAM FM signal modulated with full field magenta (BV001 pin8)	Oscilloscope	BX001 pin 19	Check for magenta bar= 180±25mVpp
(Not for all sets)		PB NTSC FM signal modulated with colour bar (BV001 pin8)	Oscilloscope	BX001 pin 19	Check for PAL burst= 195±30mVpp (NTSC on PAL mode)

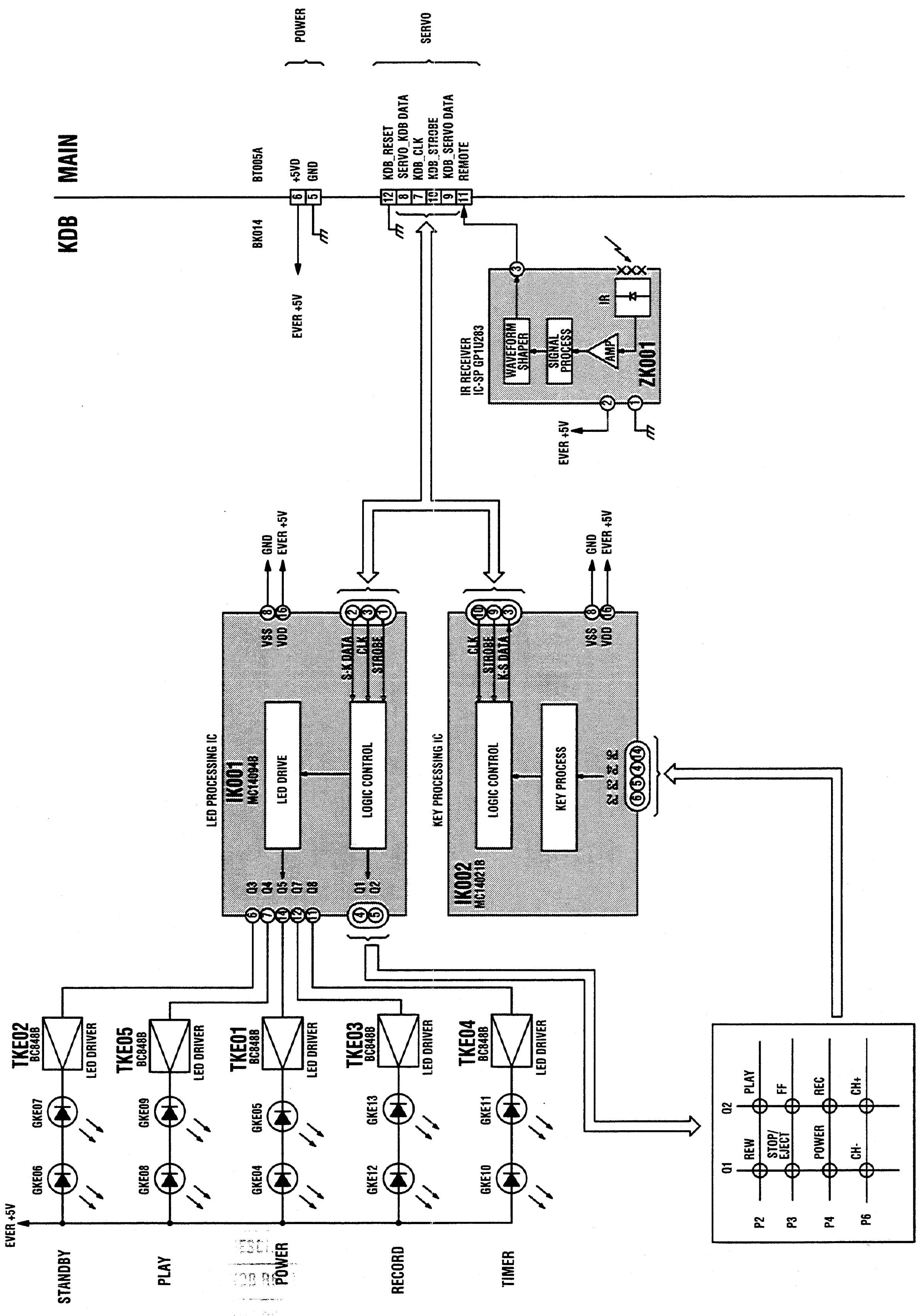
BOARD INTERCONNECTIONS - SCHEMA D'INTERCONNEXIONS - VERDRAHTUNGSPLAN - SCHEMA DEI COLLEGAMENTI - ESQUEMA DE INTERCONEXIONES


CAM C 1
CAM B 2
CAM A 3
GND 4
LO_IN 5
LO_OUT 6
FFC 6W L124mm
FFC CONN
1 CAM C
2 CAM B
3 CAM A
4 GND
5 LO_IN
6 LO_OUT
CAM LOADING MOTOR
BT002 (60431002) SOLDERED
BT002A (10167420)
1 VMC
2 MGND
3 AGND
4 FGA
5 FGB
6 CFG_BIAS
7 CDIR
8 LIMITER
9 C_REG
10 A_VCC1
CONN FE
CAPSTAN MOTOR
(BOARD TO BOARD)
CONN MA BT001 (10137630)
GND 1
REC_YC 2
U2_+5VS 3
HD_CSYNC 4
DFFHASEL 5
HD_VIDEO_ENV 6
COMPARATOR 7
PB_YC 8
NC 9
GND 10
FFC 10W L
1 GND
2 REC_YC
3 U2_+5VS
4 HD_CSYNC
5 DFFHASEL
6 HD_VIDEO_ENV
7 COMPARATOR
8 PB_YC
9 NC
10 GND
SOLDERED
HEAD AMP.
BV001 (10175950)
FFC CNN(1mm)
SECAM MODULE L
PB_Y/C 1
PB_ON 2
CHR_REC 3
P/ME_REC 4
HA_SEL 5
GND 6
V_EE_REC 7
+5VS 8
P/ME_CHR 9
PB_CHROMA 10
COL_OFF 11
CSYNC 12
KIL_DET 13
NC 14
NC 15
4.43MHz 16
BC100 CONN MA (10100910)
4 CTL_OUT
3 DRUM FF
2 GND
1 PB_YC
BW001 (11004830)
BOARD TO BOARD
1 FE HEAD
2 GND
BS030 (20212580)
FULL ERASE HEAD
ERASECTL 1
GND 2
A_LIN_REC 3
A_LIN_PB 4
NC 5
P_R_CTL1 6
C_BIAS 7
FFC 7W L140mm
FFC CONN
1 ERASECTL
2 GND
3 A_LIN_REC
4 A_LIN_PB
5 NC
6 P_R_CTL1
7 C_BIAS
ACE HEAD
BS034 (10120770)
BS034A (10120790)
SOLDERED
14 CAMERA_PAUSE
13 +14VE
12 KDB_RESET
11 REMOTE
10 KDB_STROBE
9 KDB_SERVO_DATA
8 SERVO_KDB_DATA
7 KDB_CLOCK
6 +5VD
5 GND
4 UH+
3 UH-
2 U5_32VE
1 +6VE_IR
BT005 (10161270)
BT005A (10161260)
SOLDERED
14W L150mm FFC
BK014
FFC CONN
UNLOCKING SYSTEM
KDB
20 43 25 90 (WD)

CONNECTING SYSTEM	PITCH mm
MMC	1.27
FFC	1.27/1.00
WIRE WITH CONN	2.00
WIRE TRAP	2.00
BOARD TO BOARD	2.5
CONN MALE(MA)	2.5

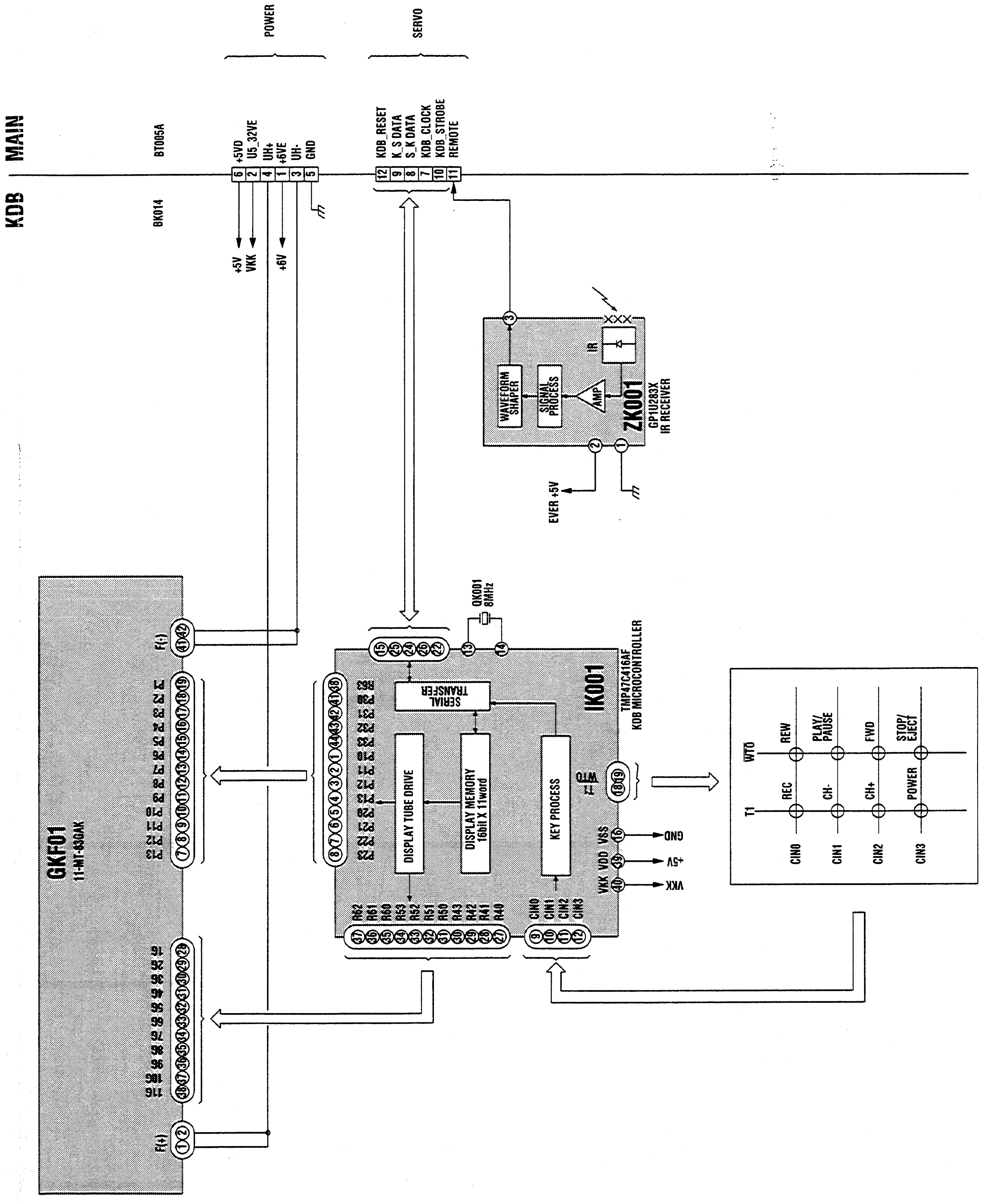
KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


POWER
SERVO
MAIN
KDB
BT005A
BK014
+5VD
GND
KDB_RESET
SERVO_KDB DATA
KDB_CLK
KDB_STROBE
KDB_SERVO DATA
REMOTE
EVER +5V
IR RECEIVER
IC-SP GP1U283
WAVEFORM SHAPER
SIGNAL PROCESS
AMP
IR
ZK001
LED PROCESSING IC
IK001
MC14094B
LED DRIVE
LOGIC CONTROL
VSS
VDD
S-K DATA
CLK
STROBE
KEY PROCESSING IC
IK002
MC14021B
KEY PROCESS
K-S DATA
TKE02
TKE05
TKE01
TKE03
TKE04
BC848B
LED DRIVER
GKE07
GKE06
GKE09
GKE08
GKE05
GKE04
GKE13
GKE12
GKE11
GKE10
STANDBY
PLAY
POWER
RECORD
TIMER
REW
STOP/EJECT
FF
POWER
REC
CH-
CH+
P2
P3
P4
P6

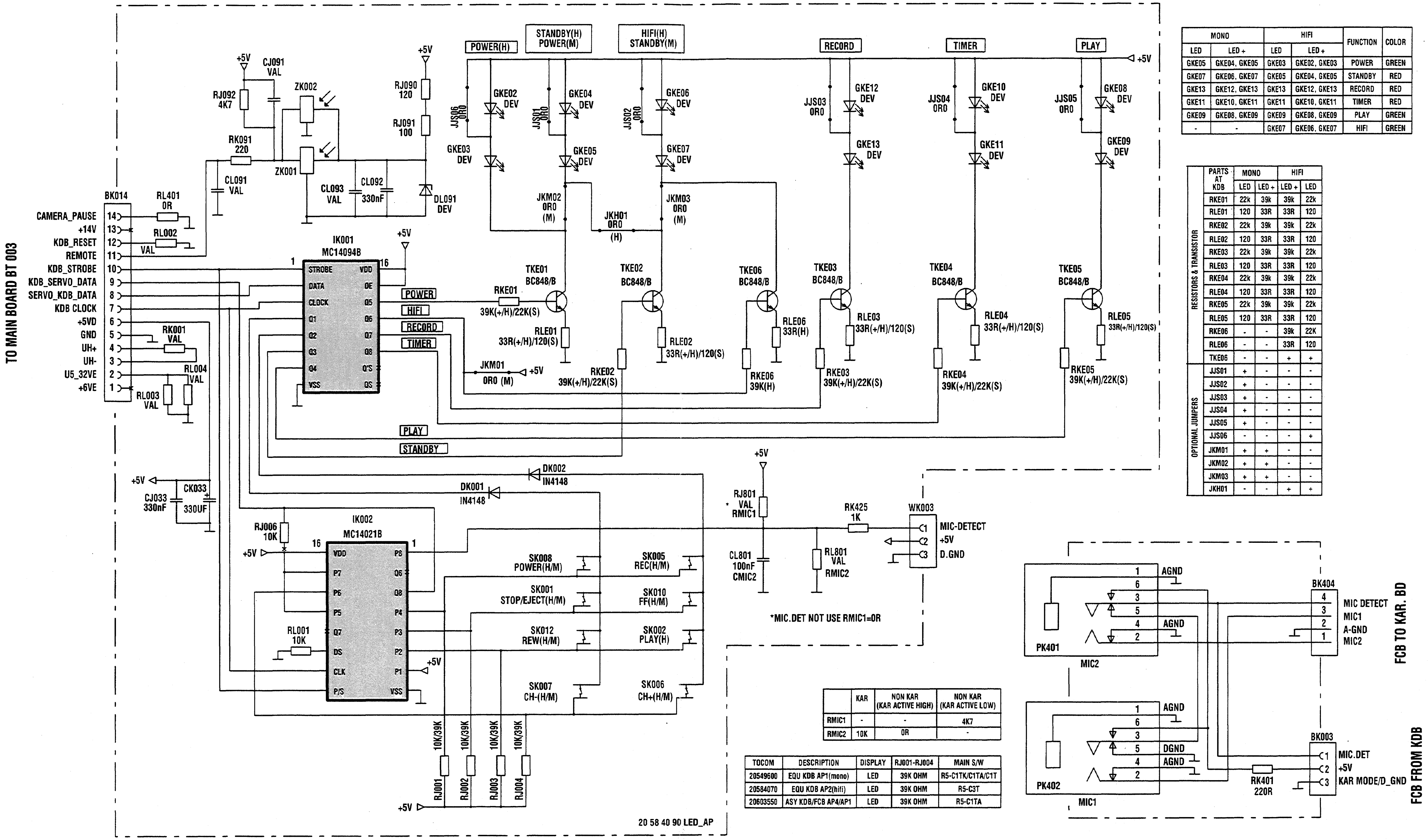
KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


POWER
SERVO
MAIN
KDB
BT005A
BK014
+5VD
U5_32VE
UH+
+6VE
UH-
GND
KDB_RESET
K_S DATA
S_K DATA
KDB_CLOCK
KDB_STROBE
REMOTE
+5V
VKK
+6V
GP1U283X
IR RECEIVER
WAVEFORM SHAPER
SIGNAL PROCESS
AMP
IR
ZK001
EVER +5V
QK001
8MHz
IK001
TMP47C416AF
KDB MICROCONTROLLER
SERIAL TRANSFER
DISPLAY TUBE DRIVE
DISPLAY MEMORY 16bit X 11word
KEY PROCESS
GKF01
11-MT-48GAK
F(-)
F(+)
GND
+5V
VKK
CIN0
CIN1
CIN2
CIN3
WTO
T1
REW
PLAY/PAUSE
FWD
STOP/EJECT
REC
CH-
CH+
POWER

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

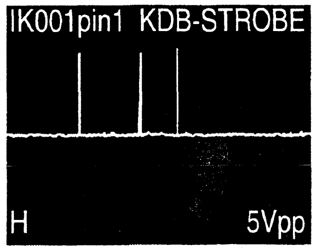

TO MAIN BOARD BT 003
BK014
CAMERA_PAUSE 14
+14V 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE 1
RL401 0R
RL002 VAL
RK001 VAL
RL004 VAL
RL003 VAL
+5V
CJ091 VAL
RJ092 4K7
ZK002
RK091 220
CL091 VAL
ZK001
CL093 VAL
CL092 330nF
RJ090 120
RJ091 100
DL091 DEV
IK001 MC14094B
STROBE VDD DATA OE CLOCK Q5 Q1 Q6 Q2 Q7 Q3 Q8 Q4 Q'S VSS QS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
JJS06 0R0
JJS01 0R0
JJS02 0R0
JJS03 0R0
JJS04 0R0
JJS05 0R0
GKE02 DEV
GKE03 DEV
GKE04 DEV
GKE05 DEV
GKE06 DEV
GKE07 DEV
GKE12 DEV
GKE13 DEV
GKE10 DEV
GKE11 DEV
GKE08 DEV
GKE09 DEV
JKM02 0R0 (M)
JKH01 0R0 (H)
JKM03 0R0 (M)
JKM01 0R0 (M)
TKE01 BC848/B
TKE02 BC848/B
TKE06 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
RKE01 39K(+/H)/22K(S)
RLE01 33R(+/H)/120(S)
RKE02 39K(+/H)/22K(S)
RLE02 33R(+/H)/120(S)
RKE06 39K(H)
RLE06 33R(H)
RKE03 39K(+/H)/22K(S)
RLE03 33R(+/H)/120(S)
RKE04 39K(+/H)/22K(S)
RLE04 33R(+/H)/120(S)
RKE05 39K(+/H)/22K(S)
RLE05 33R(+/H)/120(S)
CJ033 330nF
CK033 330UF
DK002 IN4148
DK001 IN4148
RJ006 10K
IK002 MC14021B
VDD P8 P7 Q6 P6 Q8 P5 P4 Q7 P3 DS P2 CLK P1 P/S VSS
RL001 10K
SK008 POWER(H/M)
SK005 REC(H/M)
SK001 STOP/EJECT(H/M)
SK010 FF(H/M)
SK012 REW(H/M)
SK002 PLAY(H)
SK007 CH-(H/M)
SK006 CH+(H/M)
RJ001 10K/39K
RJ002 10K/39K
RJ003 10K/39K
RJ004 10K/39K
RJ801 VAL RMIC1
CL801 100nF CMIC2
RK425 1K
RL801 VAL RMIC2
WK003
MIC-DETECT
+5V
D.GND
*MIC.DET NOT USE RMIC1=0R
PK401
MIC2
AGND
BK404
MIC DETECT
MIC1
A-GND
MIC2
FCB TO KAR. BD
PK402
MIC1
DGND
BK003
MIC.DET
KAR MODE/D_GND
RK401 220R
FCB FROM KDB
20 58 40 90 LED_AP

MONO		HIFI		FUNCTION	COLOR
LED	LED +	LED	LED +		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13	GKE12, GKE13	RECORD	RED
GKE11	GKE10, GKE11	GKE11	GKE10, GKE11	TIMER	RED
GKE09	GKE08, GKE09	GKE09	GKE08, GKE09	PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

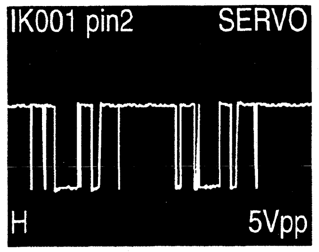
	PARTS AT KDB	MONO		HIFI	
		LED	LED +	LED +	LED
RESISTORS & TRANSISTOR	RKE01	22k	39k	39k	22k
	RLE01	120	33R	33R	120
	RKE02	22k	39k	39k	22k
	RLE02	120	33R	33R	120
	RKE03	22k	39k	39k	22k
	RLE03	120	33R	33R	120
	RKE04	22k	39k	39k	22k
	RLE04	120	33R	33R	120
	RKE05	22k	39k	39k	22k
	RLE05	120	33R	33R	120
	RKE06	-	-	39k	22K
	RLE06	-	-	33R	120
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	-	-
	JJS02	+	-	-	-
	JJS03	+	-	-	-
	JJS04	+	-	-	-
	JJS05	+	-	-	-
	JJS06	-	-	-	+
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

	KAR	NON KAR (KAR ACTIVE HIGH)	NON KAR (KAR ACTIVE LOW)
RMIC1	-	-	4K7
RMIC2	10K	0R	-

TOCOM	DESCRIPTION	DISPLAY	RJ001-RJ004	MAIN S/W
20549600	EQU KDB AP1(mono)	LED	39K OHM	R5-C1TK/C1TA/C1T
20584070	EQU KDB AP2(hifi)	LED	39K OHM	R5-C3T
20603550	ASY KDB/FCB AP4/AP1	LED	39K OHM	R5-C1TA



①



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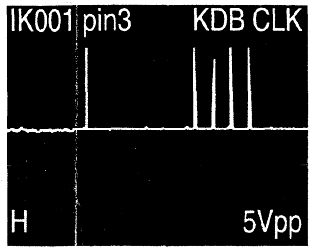

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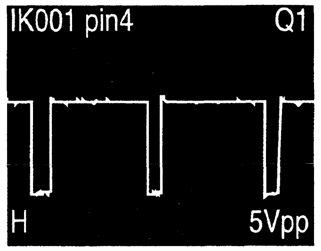

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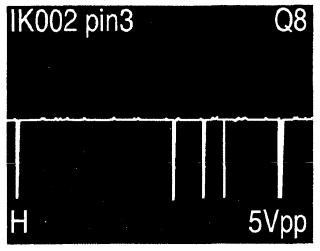
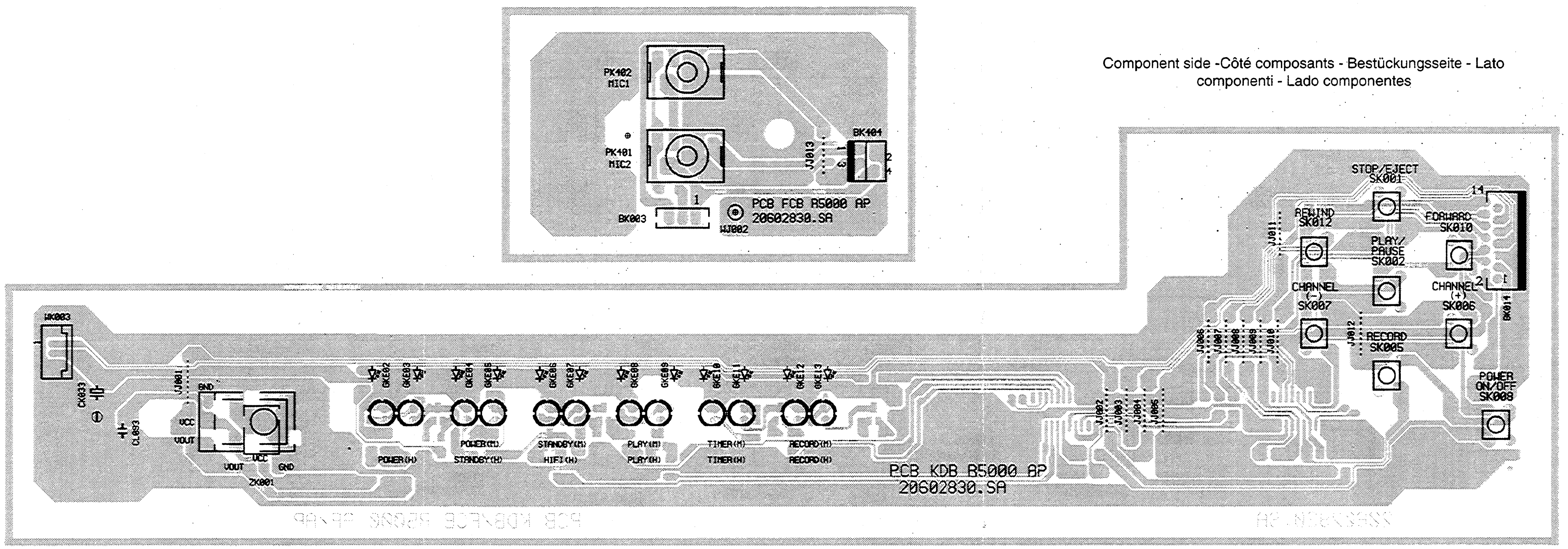


⑤

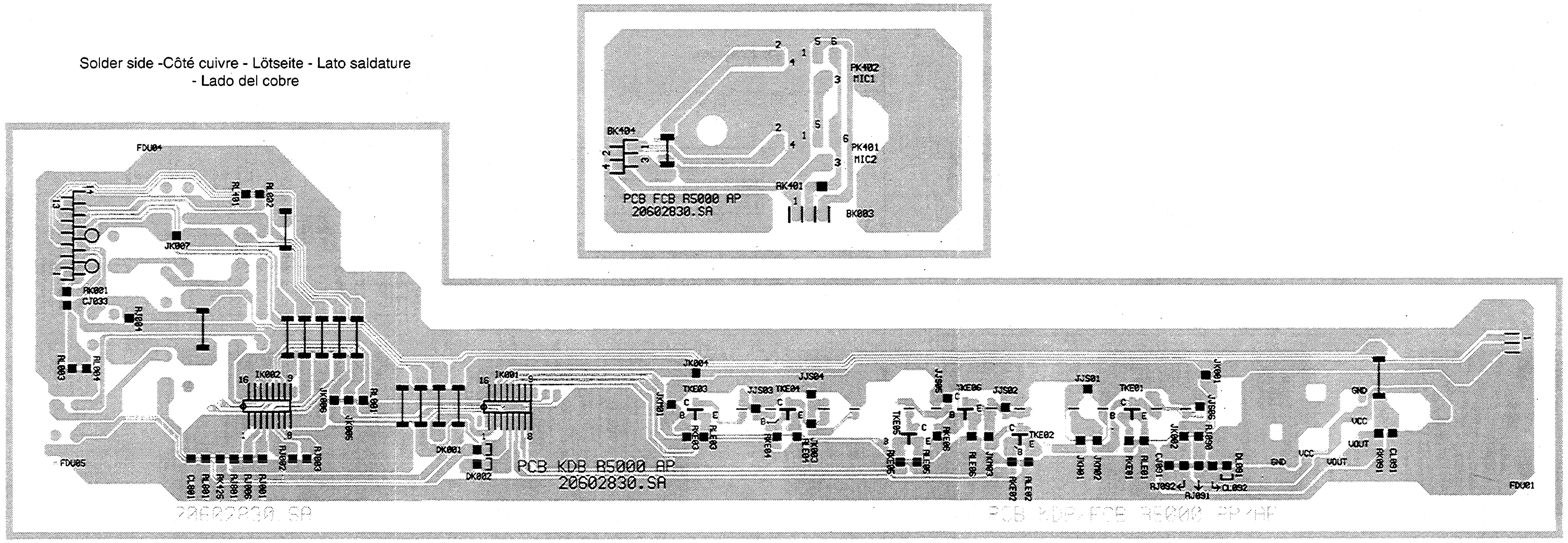
KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR


PK402
MIC1
PK401
MIC2
BK404
JJ013
BK003
PCB FCB R5000 AP
20602830.SA
STOP/EJECT
SK001
REWIND
SK012
FORWARD
SK010
PLAY/
PAUSE
SK002
CHANNEL
(−)
SK007
CHANNEL
(+)
SK006
RECORD
SK005
POWER
ON/OFF
SK008
POWER(M)
STANDBY(M)
PLAY(M)
TIMER(M)
RECORD(M)
POWER(H)
STANDBY(H)
HIFI(H)
PLAY(H)
TIMER(H)
RECORD(H)
GND
VCC
VOUT
ZK001
PCB KDB R5000 AP
20602830.SA

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

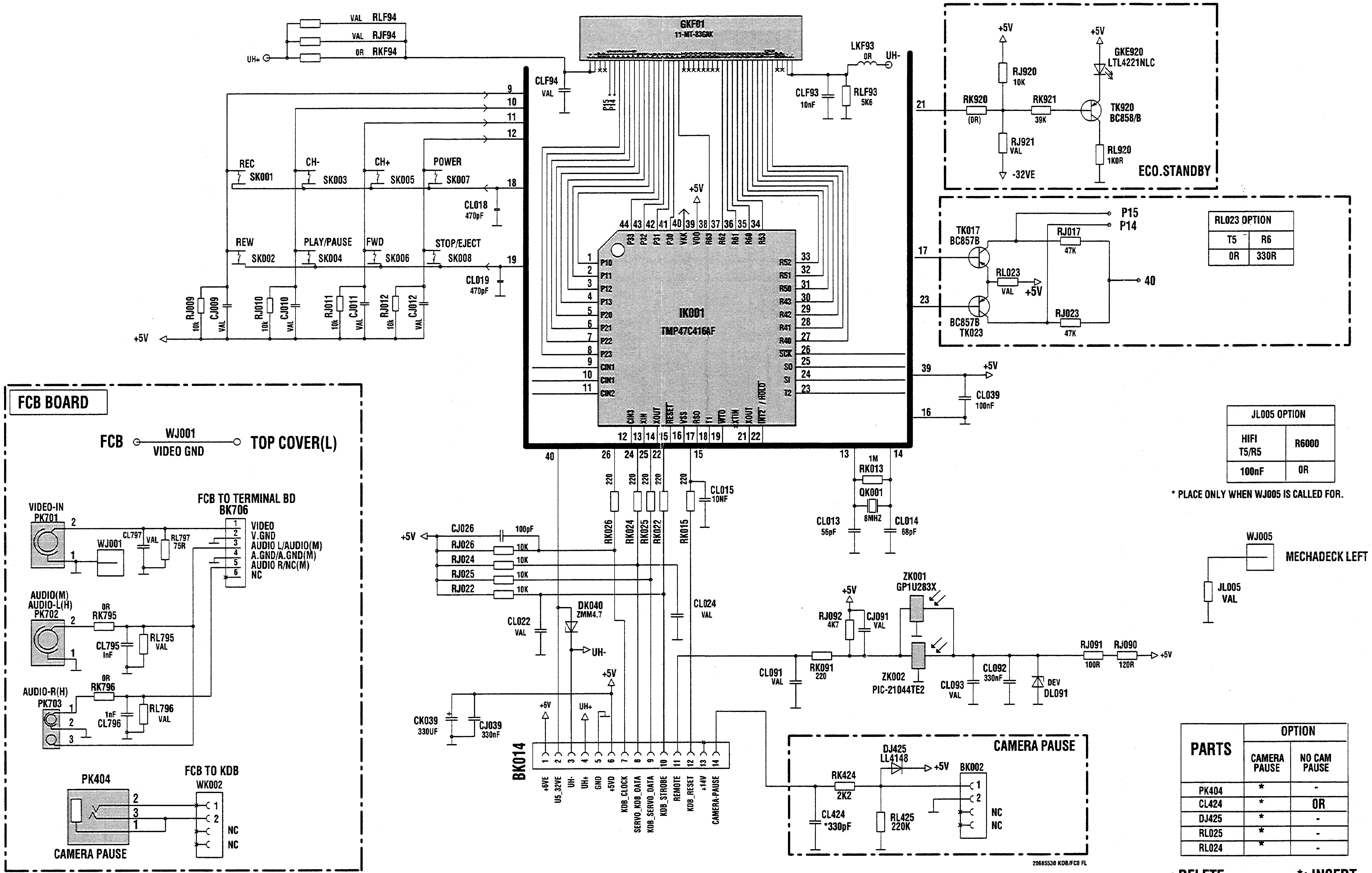
KDB		MODE		
LOC	PIN	EE	PLAY	REC.
IK001	1	0	0	0
	2	4	4.1	4.1
	3	0	0	0
	4	4.5	4.4	4.4
	5	4.5	4.5	4.5
	6	0	0	0
	7	0	5.1	0
	8	0	0	0
	9	0.2	0.3	0.3
	10	0.2	0.3	0.3
	11	0	0	0
	12	0	0	0
	13	5.2	5.2	5.2
	14	5.2	5.1	5.1
	15	5.2	5.2	5.2
	16	5.2	5.2	5.2
IK002	1	5.2	5.2	5.2
	2	NC	NC	NC
	3	5.1	5.1	5.1
	4	5.2	5.2	5.2
	5	5.2	5.2	5.2
	6	0	5.2	5.2
	7	5.2	5.2	5.2
	8	0	0	0
	9	0	0	0
	10	0	0	0
	11	0	0	0
	12	NC	NC	NC
	13	5.2	5.2	5.2
	14	5.2	5.2	5.2
	15	5.2	5.2	5.2
	16	5.2	5.2	5.2
TKE01	E	2.5	2.5	2.5
	B	3.3	3.2	3.2
	C	2.9	2.9	2.9
TKE02	E	0	0	0
	B	0	0	0
	C	4.1	4.1	4.1
TKE03	E	0	0	3.6
	B	0	0	3.3
	C	4.2	4.1	3.2
TKE04	E	0	0	0
	B	0	0	0
	C	4.1	4.1	4.1
TKE05	E	0	2.5	0
	B	0	3.2	0
	C	3.9	3.9	3.9
ZK001	1	0	0	0
	2	4.7	4.7	4.7
	3	5.1	5.1	5.1

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


BK404
PK402
MIC1
PK401
MIC2
RK401
BK003
PCB FCB R5000 AP
20602830.SA
FDU04
FDU05
FDU01
IK002
IK001
TKE01
TKE02
TKE03
TKE04
TKE05
TKE06
GND
VCC
VOUT
PCB KDB R5000 AP
20602830.SA

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


GKF01
11-MT-83GNK
RLF94 VAL
RJF94 VAL
RKF94 0R
UH+
UH-
LKF93 0R
CLF94 VAL
CLF93 10nF
RLF93 5K6
P15
P14
REC SK001
CH- SK003
CH+ SK005
POWER SK007
REW SK002
PLAY/PAUSE SK004
FWD SK006
STOP/EJECT SK008
CL018 470pF
CL019 470pF
RJ009 10k
CJ009 VAL
RJ010 10k
CJ010 VAL
RJ011 10k
CJ011 VAL
RJ012 10k
CJ012 VAL
+5V
IK001
TMP47C416AF
P10
P11
P12
P13
P20
P21
P22
P23
CIN3
CIN1
CIN2
R52
R51
R50
R43
R42
R41
R40
SCK
SO
SI
T2
VKK
VDD
XIN
XOUT
RESET
VSS
T1
WTO
XTIN
INT2 / HOLD
+5V
RK920 (0R)
RK921 39K
RJ920 10K
RJ921 VAL
-32VE
GKE920 LTL4221NLC
TK920 BC858/B
RL920 1K0R
ECO.STANDBY
TK017 BC857B
RJ017 47K
RL023 VAL
RJ023 47K
BC857B TK023
40
39
16
CL039 100nF
FCB BOARD
FCB
WJ001 VIDEO GND
TOP COVER(L)
VIDEO-IN PK701
CL797 VAL
RL797 75R
FCB TO TERMINAL BD BK706
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
AUDIO(M) AUDIO-L(H) PK702
RK795 0R
CL795 InF
RL795 VAL
AUDIO-R(H) PK703
RK796 0R
CL796 1nF
RL796 VAL
PK404
CAMERA PAUSE
FCB TO KDB WK002
NC
NC
CJ026 100pF
RJ026 10K
RJ024 10K
RJ025 10K
RJ022 10K
RK026 220
RK024 220
RK025 220
RK022 220
RK015 220
CL015 10NF
CL022 VAL
DK040 ZMM4.7
CL024 VAL
CK039 330UF
CJ039 330nF
+6V
UH+
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
RK013 1M
QK001 8MHZ
CL013 56pF
CL014 68pF
ZK001 GP1U283X
RJ092 4K7
CJ091 VAL
CL091 VAL
RK091 220
ZK002 PIC-21044TE2
CL093 VAL
CL092 330nF
DEV DL091
RJ091 100R
RJ090 120R
CAMERA PAUSE
DJ425 LL4148
RK424 2K2
CL424 *330pF
RL425 220K
BK002
WJ005
MECHADECK LEFT
JL005 VAL
* PLACE ONLY WHEN WJ005 IS CALLED FOR.
20685530 KDB/FCB FL

RL023 OPTION	
T5	R6
0R	330R

JL005 OPTION	
HIFI T5/R5	R6000
100nF	0R

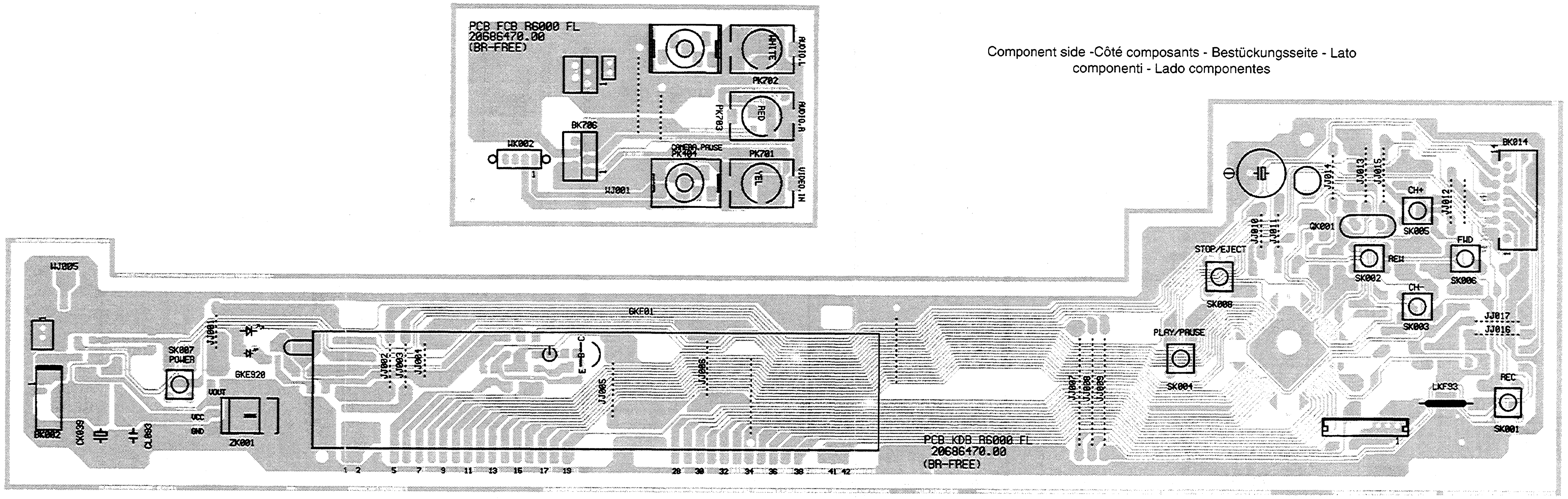
PARTS	OPTION	
	CAMERA PAUSE	NO CAM PAUSE
PK404	*	-
CL424	*	0R
DJ425	*	-
RL025	*	-
RL024	*	-

-: DELETE

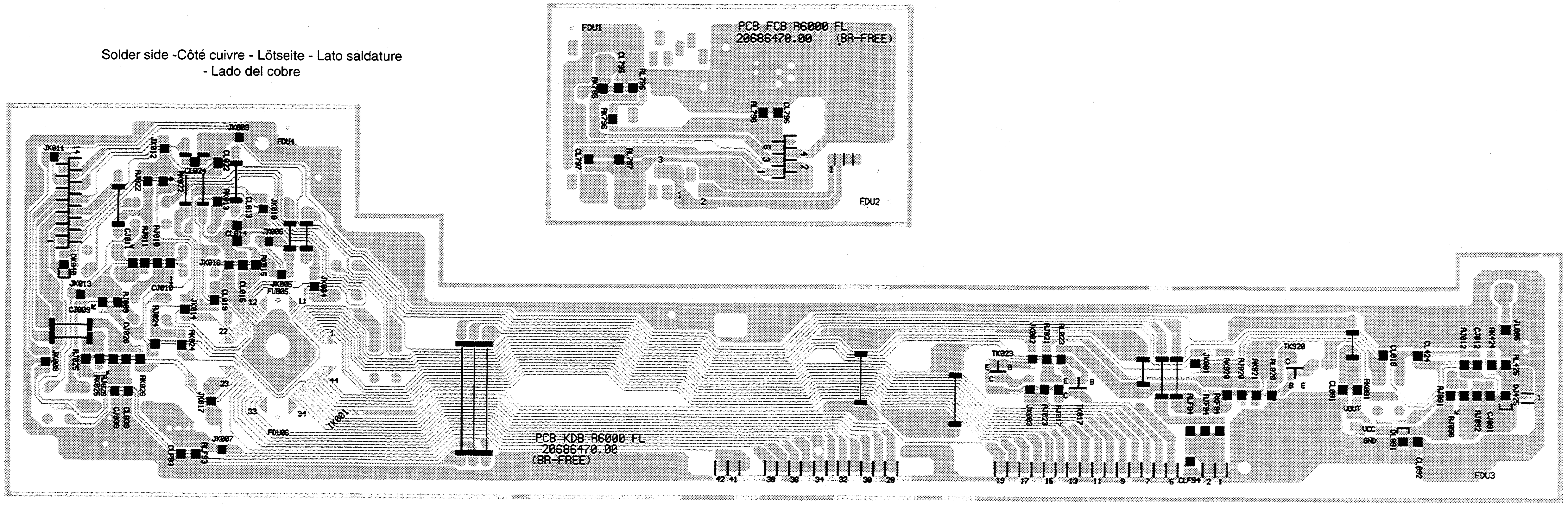
*: INSERT

TOCOM	DESCRIPTION	CAM.PAUSE	FAV	S/W	ECO	SK001-SK008	MODELS
20685500	ASY KDB/FCB R6 FL1/FL1	YES	2	R6-R1T	YES	HIFI/MONO	VP2750,VP4750
20729530	ASY KDB/FCB R6 FL2/FL2	YES	3	R6-R1T	NO	HIFI/MONO	VPH6750
20723090	EQU KDB R6 FL3	NO	NO	R6-R1T	YES	HIFI/MONO	VP2701,VP4701,V2700,V4700

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

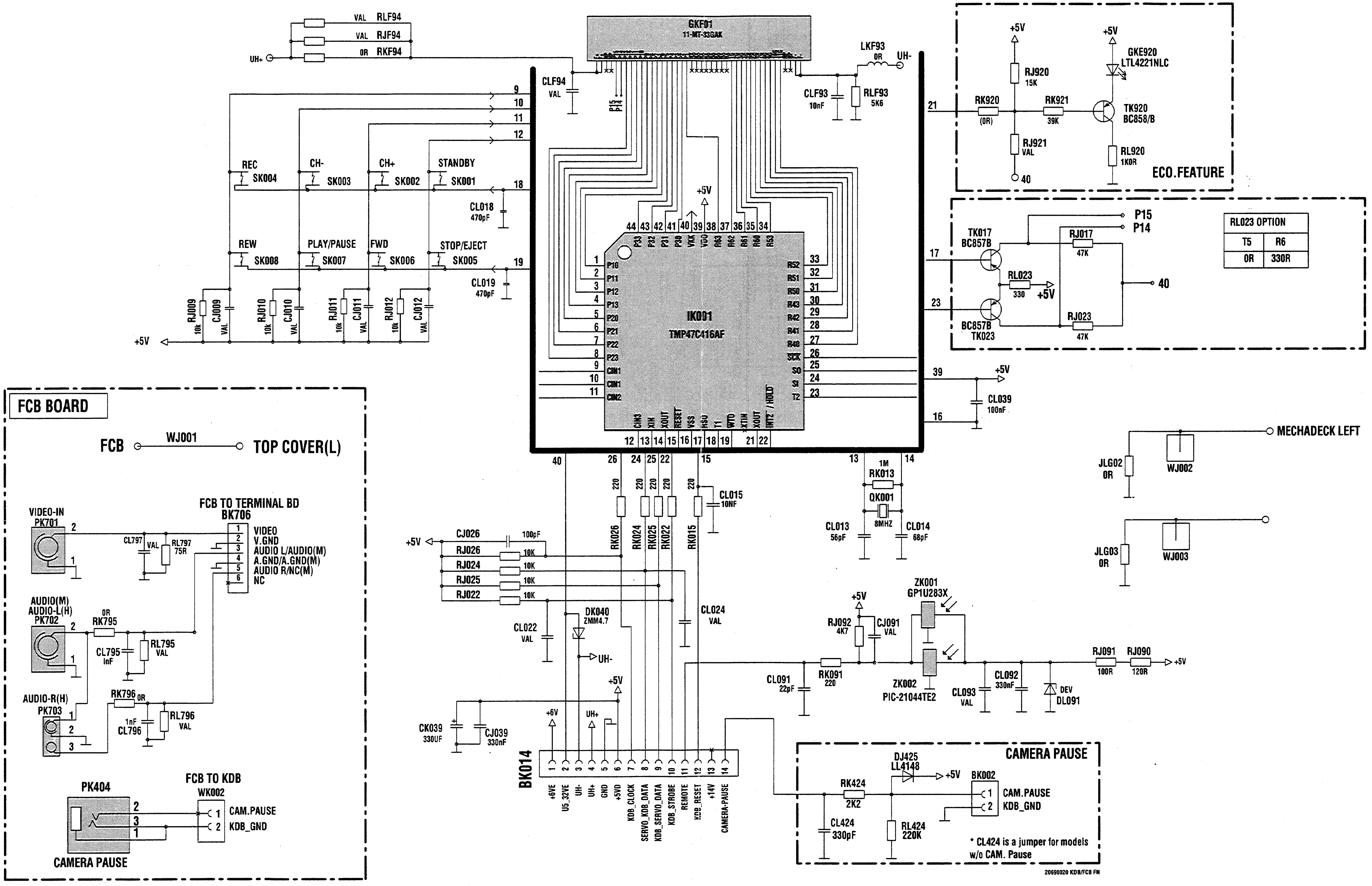
PCB FCB R6000 FL
20686470.00
(BR-FREE)
AUDIO.L
WHITE
PK702
PK703
RED
AUDIO.R
BK706
WK002
CAMERA.PAUSE
PK704
PK701
YEL
VIDEO.IN
WJ001
BK014
CH+
SK005
QK001
FWD
STOP/EJECT
REW
SK002
SK006
SK008
CH-
SK003
JJ017
JJ016
WJ005
GKF01
PLAY/PAUSE
SK007
POWER
BKE920
SK004
LKFS3
REC
SK001
VOUT
VCC
GND
ZK001
BK002
PCB KDB R6000 FL
20686470.00
(BR-FREE)


Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

FDU1
PCB FCB R6000 FL
20686470.00 (BR-FREE)
FDU2
JK009
JK011
FDU4
JK013
FDU5
JK017
JK007
FDU6
TK023
TK020
PCB KDB R6000 FL
20686470.00
(BR-FREE)
VOUT
VCC
GND
FDU3

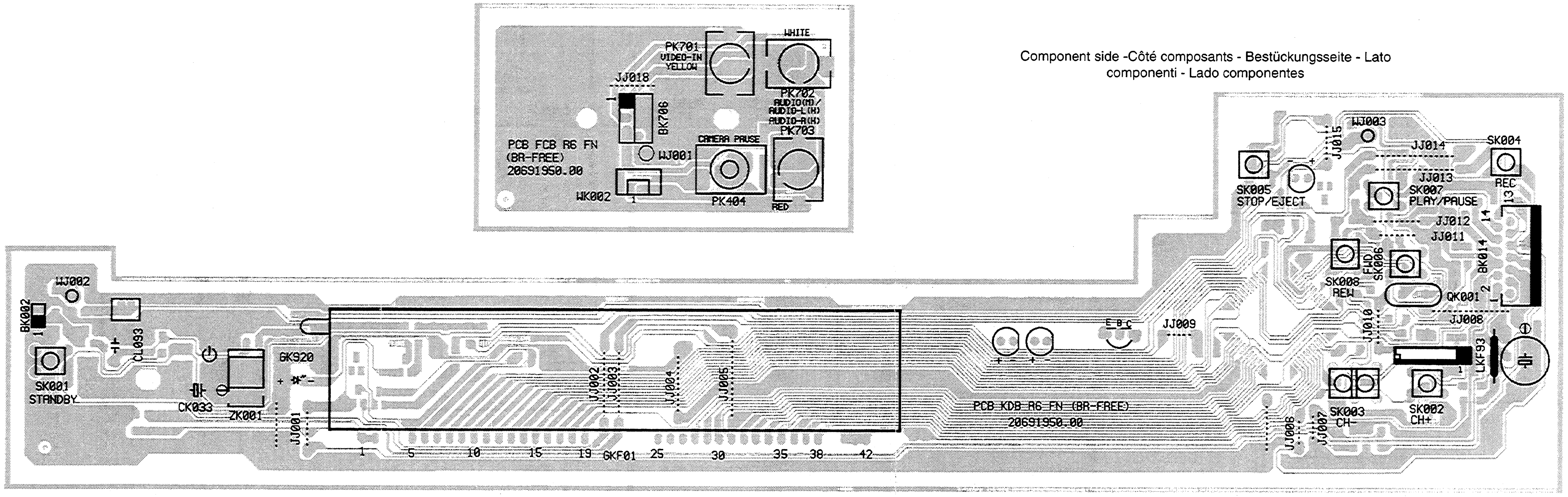
KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

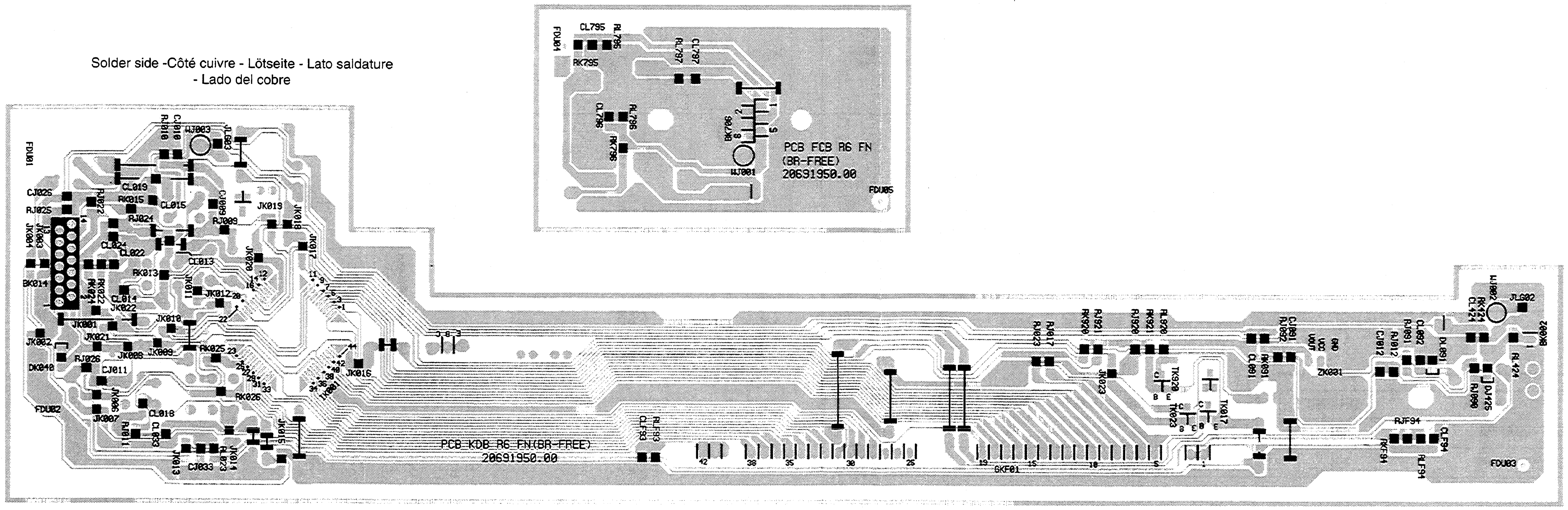

GKF01
11-MT-33GAK
RLF94
RJF94
RKF94
UH+
LKF93
UH-
CLF94
CLF93 10nF
RLF93 5K6
REC SK004
CH- SK003
CH+ SK002
STANDBY SK001
REW SK008
PLAY/PAUSE SK007
FWD SK006
STOP/EJECT SK005
CL018 470pF
CL019 470pF
RJ009 CJ009 RJ010 CJ010 RJ011 CJ011 RJ012 CJ012
+5V
IK001
TMP47C416AF
ECO.FEATURE
RJ920 15K
RK920 (0R)
RK921 39K
RJ921 VAL
RL920 1K0R
TK920 BC858/B
GKE920 LTL4221NLC
P15
P14
TK017 BC857B
RJ017 47K
RL023 330
RJ023 47K
BC857B TK023
RL023 OPTION
T5 R6
0R 330R
CL039 100nF
MECHADECK LEFT
JLG02 0R
WJ002
JLG03 0R
WJ003
FCB BOARD
FCB WJ001 TOP COVER(L)
VIDEO-IN PK701
FCB TO TERMINAL BD BK706
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
CL797 VAL
RL797 75R
AUDIO(M) AUDIO-L(H) PK702
RK795 0R
CL795 1nF
RL795 VAL
AUDIO-R(H) PK703
RK796 0R
CL796 1nF
RL796 VAL
PK404
FCB TO KDB WK002
CAM.PAUSE
KDB_GND
CAMERA PAUSE
CJ026 100pF
RJ026 10K
RJ024 10K
RJ025 10K
RJ022 10K
RK026 RK024 RK025 RK022 RK015
CL015 10NF
CL022 VAL
DK040 ZMM4.7
CL024 VAL
CK039 330UF
CJ039 330nF
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
RK013 1M
QK001 8MHZ
CL013 56pF
CL014 68pF
ZK001 GP1U283X
RJ092 4K7
CJ091 VAL
CL091 22pF
RK091 220
ZK002 PIC-21044TE2
CL093 VAL
CL092 330nF
DEV DL091
RJ091 100R
RJ090 120R
DJ425 LL4148
RK424 2K2
BK002
CL424 330pF
RL424 220K
* CL424 is a jumper for models w/o CAM. Pause
20690020 KDB/FCB FN

TOCOM	DESCRIPTION	CAM.PAUSE	FAV	MODEL	ECO	RL023	WJ002	JLG02	TOOL
20699840	EQU [illegible] FN1	NO	NO	T5000	NO	0R	NO	NO	97-3B
20734180	EQU K[illegible]5 FN2	NO	NO	R6000	YES	330R	YES	YES	97-3B

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

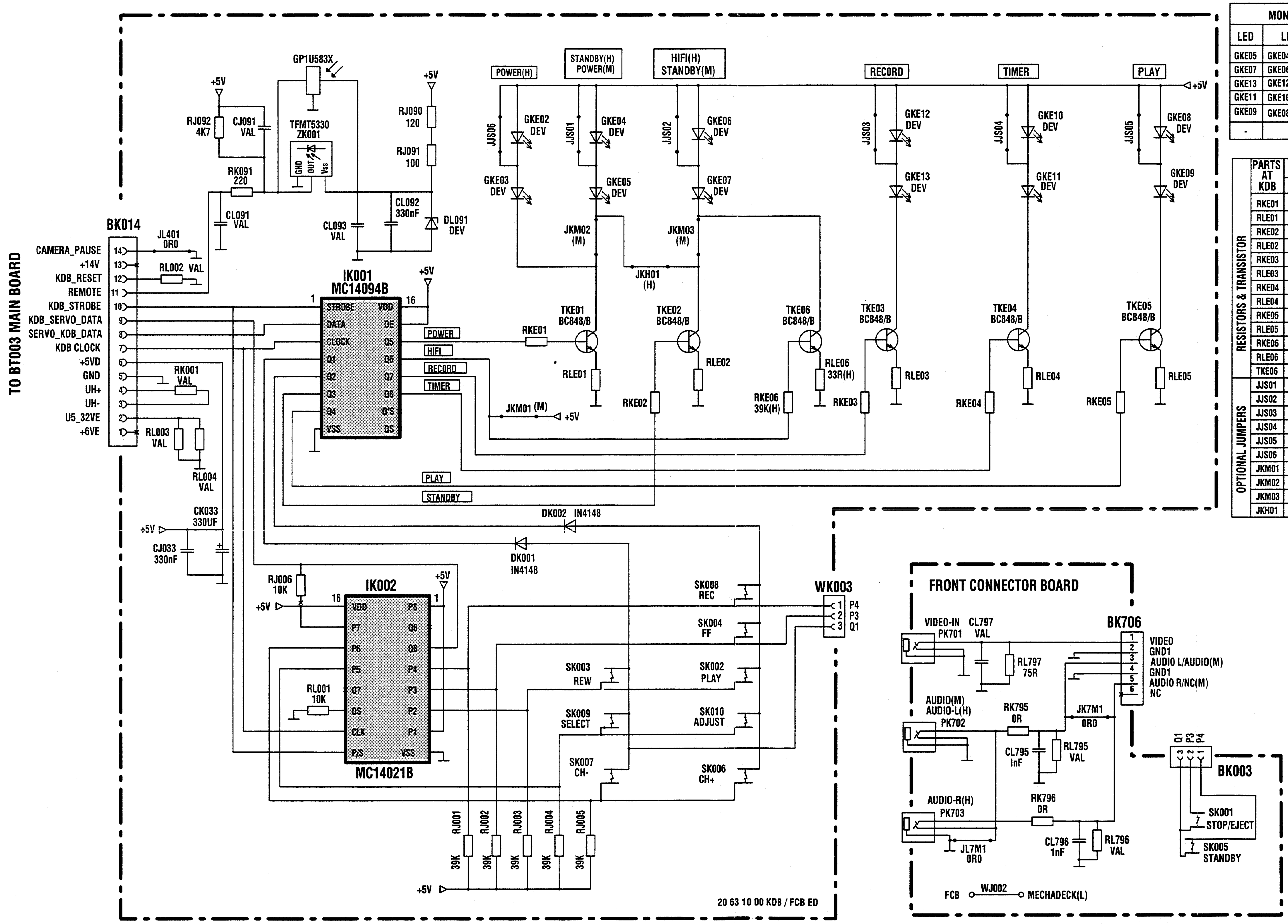
PK701
VIDEO-IN
YELLOW
WHITE
JJ018
BK706
PK702
AUDIO(M)/
AUDIO-L(H)
AUDIO-R(H)
PK703
CAMERA PAUSE
PCB FCB R6 FN
(BR-FREE)
20691950.00
WJ001
WK002
PK404
RED
WJ003
JJ015
JJ014
SK004
SK005
STOP/EJECT
JJ013
SK007
PLAY/PAUSE
REC
JJ012
JJ011
SK006
FWD
SK008
REW
BK014
QK001
JJ008
JJ010
JJ009
LKF93
SK003
CH-
SK002
CH+
JJ006
JJ007
PCB KDB R6 FN (BR-FREE)
20691950.00
WJ002
BK002
CL093
SK001
STANDBY
CK033
ZK001
GK920
JJ001
JJ002
JJ003
JJ004
JJ005
GKF01
1
5
10
15
19
25
30
35
38
42


Solder side -Côté cuivre - Lötseite - Lato saldatura - Lado del cobre

FDU04
CL795
RL795
RK795
RL797
CL797
CL796
RL796
RK796
BK706
WJ001
PCB FCB R6 FN
(BR-FREE)
20691950.00
FDU05
FDU01
WJ003
CJ010
RJ010
JLG03
CJ025
RJ025
JK004
JK003
RK015
CL019
CL015
CJ009
RJ009
JK019
RJ024
CL024
CL022
CL013
BK014
RK013
CL014
JK022
JK012
JK011
JK010
JK001
JK021
JK002
DK040
RJ026
CJ011
JK008
JK009
RK025
RK026
FDU02
JK007
CL018
CL033
CJ033
JK013
JK014
JK015
JK016
JK017
JK018
PCB KDB R6 FN (BR-FREE)
20691950.00
CLF93
RLF93
GKF01
ZK001
RJF94
RKF94
CLF94
RLF94
FDU03
JLG02
WJ002
CL024
RK424
RL424
DK002
RJ090
DJ425
CJ012
RJ012
RJ011
DL093
FDU03

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TO BT003 MAIN BOARD
BK014
CAMERA_PAUSE 14
+14V 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE 1
JL401 0R0
RL002 VAL
RK001 VAL
RL003 VAL
RL004 VAL
CK033 330UF
CJ033 330nF
+5V
GP1U583X
TFMT5330
ZK001
GND OUT Vss
RJ092 4K7
CJ091 VAL
RK091 220
CL091 VAL
CL093 VAL
RJ090 120
RJ091 100
CL092 330nF
DL091 DEV
IK001
MC14094B
STROBE DATA CLOCK Q1 Q2 Q3 Q4 VSS
VDD OE Q5 Q6 Q7 Q8 Q'S QS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
JKM01 (M)
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
JJS06 JJS01 JJS02 JJS03 JJS04 JJS05
GKE02 DEV
GKE03 DEV
GKE04 DEV
GKE05 DEV
GKE06 DEV
GKE07 DEV
GKE08 DEV
GKE09 DEV
GKE10 DEV
GKE11 DEV
GKE12 DEV
GKE13 DEV
JKM02 (M)
JKM03 (M)
JKH01 (H)
TKE01 BC848/B
TKE02 BC848/B
TKE06 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
RKE01 RKE02 RKE03 RKE04 RKE05
RKE06 39K(H)
RLE01 RLE02 RLE03 RLE04 RLE05
RLE06 33R(H)
DK002 IN4148
DK001 IN4148
RJ006 10K
IK002
MC14021B
VDD P7 P6 P5 Q7 DS CLK P/S
P8 Q6 Q8 P4 P3 P2 P1 VSS
RL001 10K
SK008 REC
SK004 FF
SK003 REW
SK002 PLAY
SK009 SELECT
SK010 ADJUST
SK007 CH-
SK006 CH+
RJ001 RJ002 RJ003 RJ004 RJ005
39K
WK003
1 P4
2 P3
3 Q1
20 63 10 00 KDB / FCB ED
FRONT CONNECTOR BOARD
VIDEO-IN CL797
PK701 VAL
RL797 75R
BK706
1 VIDEO
2 GND1
3 AUDIO L/AUDIO(M)
4 GND1
5 AUDIO R/NC(M)
6 NC
AUDIO(M) AUDIO-L(H)
PK702
RK795 0R
JK7M1 0R0
CL795 InF
RL795 VAL
AUDIO-R(H)
PK703
RK796 0R
JL7M1 0R0
CL796 1nF
RL796 VAL
Q1 P3 P4
BK003
SK001 STOP/EJECT
SK005 STANDBY
FCB WJ002 MECHADECK(L)

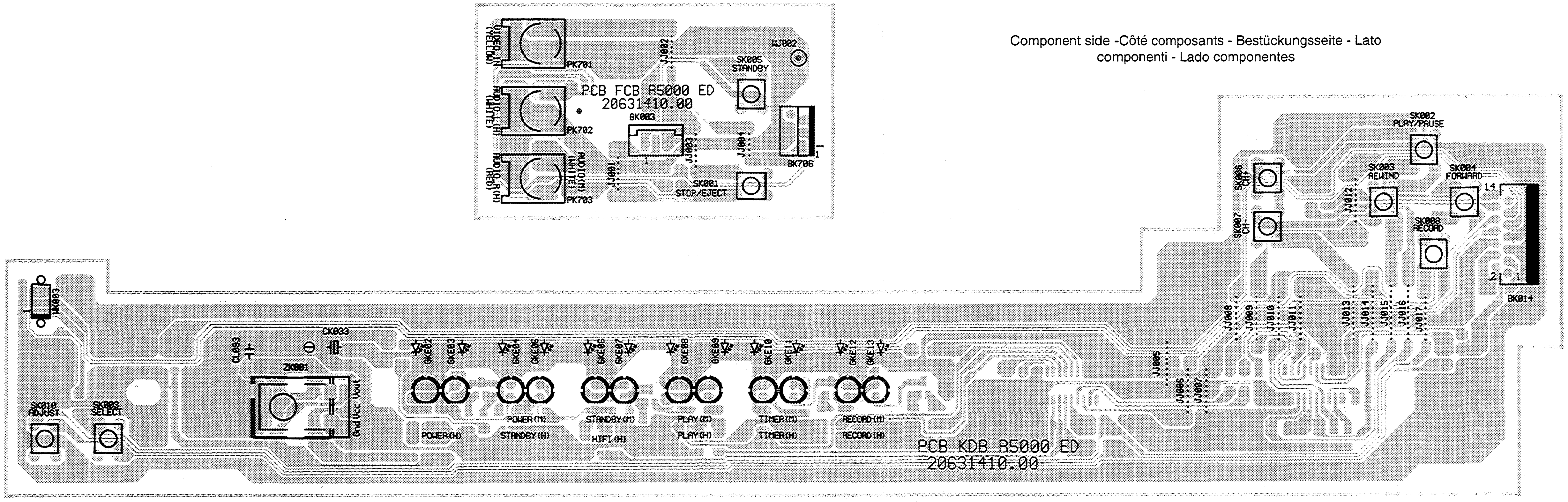
MONO		HIFI		FUNCTION	COLOR
LED	LED+	LED	LED+		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13		RECORD	RED
GKE11	GKE10, GKE11	GKE11		TIMER	RED
GKE09	GKE08, GKE0	GKE09		PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

	PARTS AT KDB	MONO		HIFI	
		LED	LED+	LED	LED+
RESISTORS & TRANSISTOR	RKE01	22K	39K	22K	39K
	RLE01	120	33R	120	33R
	RKE02	22K	39K	22K	39K
	RLE02	120	33R	120	33R
	RKE03	22K	39K	22K	39K
	RLE03	120	33R	120	33R
	RKE04	22K	39K	22K	39K
	RLE04	120	33R	120	33R
	RKE05	22K	39K	22K	39K
	RLE05	120	33R	120	33R
	RKE06	-	-	22K	39K
	RLE06	-	-	120	33R
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	+	-
	JJS02	+	-	+	-
	JJS03	+	-	+	-
	JJS04	+	-	+	-
	JJS05	+	-	+	-
	JJS06	+	-	+	-
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

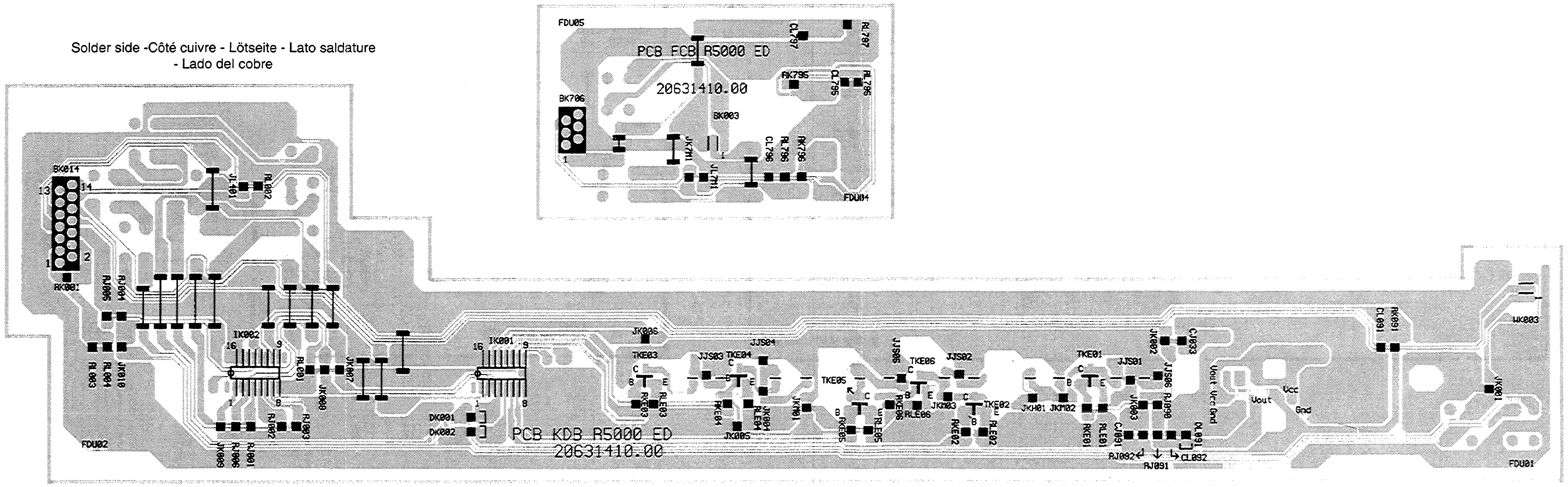
PARTS	FRONT AV	
	MONO	HIFI
PK701	*	*
PK702	-	*
PK703	*	*
JK7M1	*	-
JL7M1	*	-
CL797	*	*
RL797	*	*
CL795	-	*
RL795	-	*
RK795	-	*
CL796	*	*
RL796	*	*
RK796	*	*

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

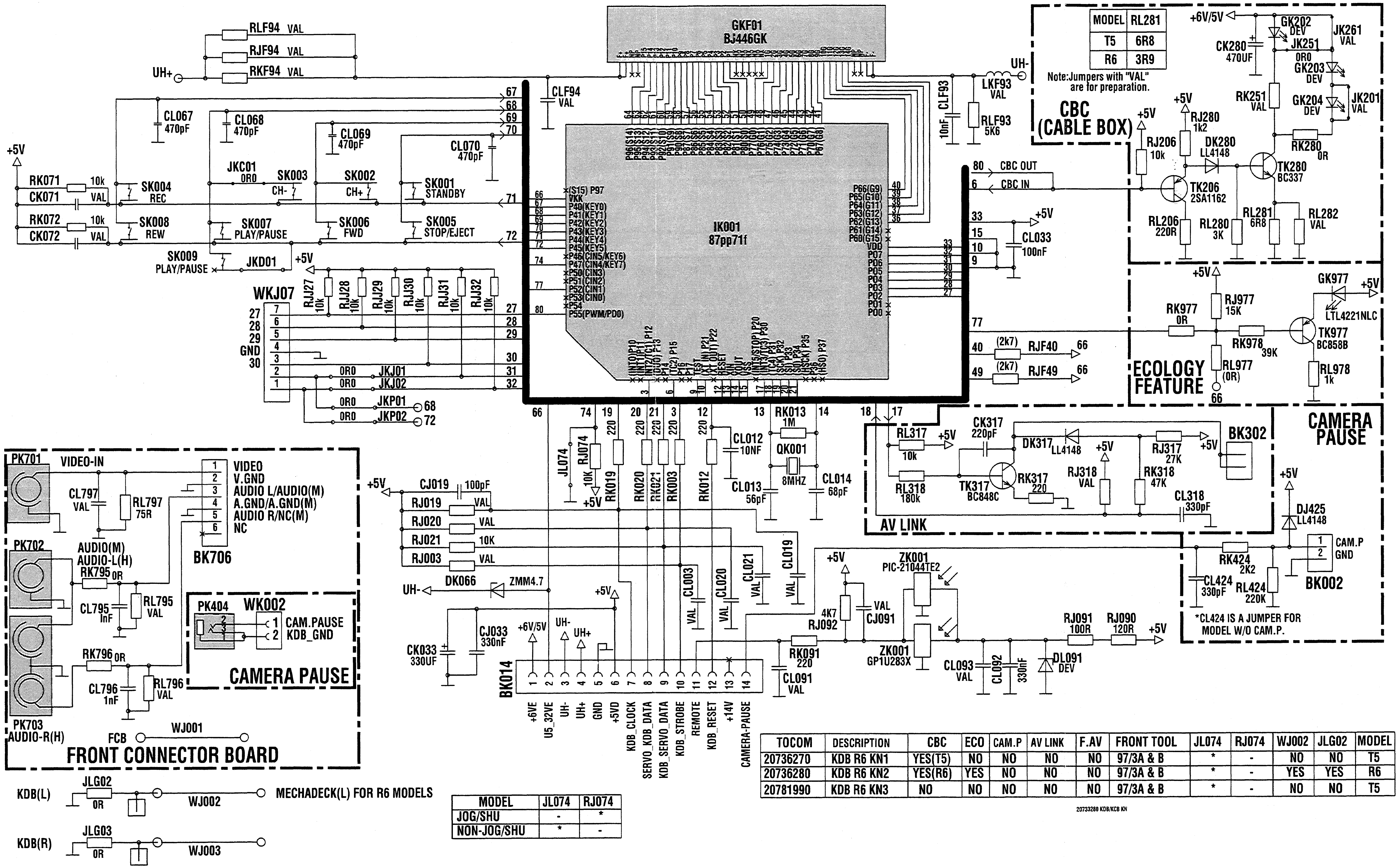

PCB FCB R5000 ED
20631410.00
PK701
PK702
PK703
SK005 STANDBY
SK001 STOP/EJECT
BK003
BK706
JJ001
JJ002
JJ003
JJ004
WJ002
VIDEO IN (YELLOW)
AUDIO L (H) (WHITE)
AUDIO R (H) (RED)
SK002 PLAY/PAUSE
SK003 REWIND
SK004 FORWARD
SK006 CH+
SK007 CH-
SK008 RECORD
BK014
SK010 ADJUST
SK009 SELECT
ZK001
CL093
CK033
WK003
POWER(H)
POWER(M)
STANDBY(H)
STANDBY(M)
HIFI(H)
PLAY(M)
PLAY(H)
TIMER(M)
TIMER(H)
RECORD(M)
RECORD(H)
Gnd Vcc Vout
PCB KDB R5000 ED
20631410.00

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


FDU05
FDU04
PCB FCB R5000 ED
20631410.00
BK706
BK003
RK795
CL795
RL795
RL797
CL797
BK014
RK001
IK002
IK001
FDU02
FDU01
DK001
DK002
TKE01
TKE02
TKE03
TKE04
TKE05
TKE06
WK003
Vout
Vcc
Gnd
PCB KDB R5000 ED
20631410.00

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

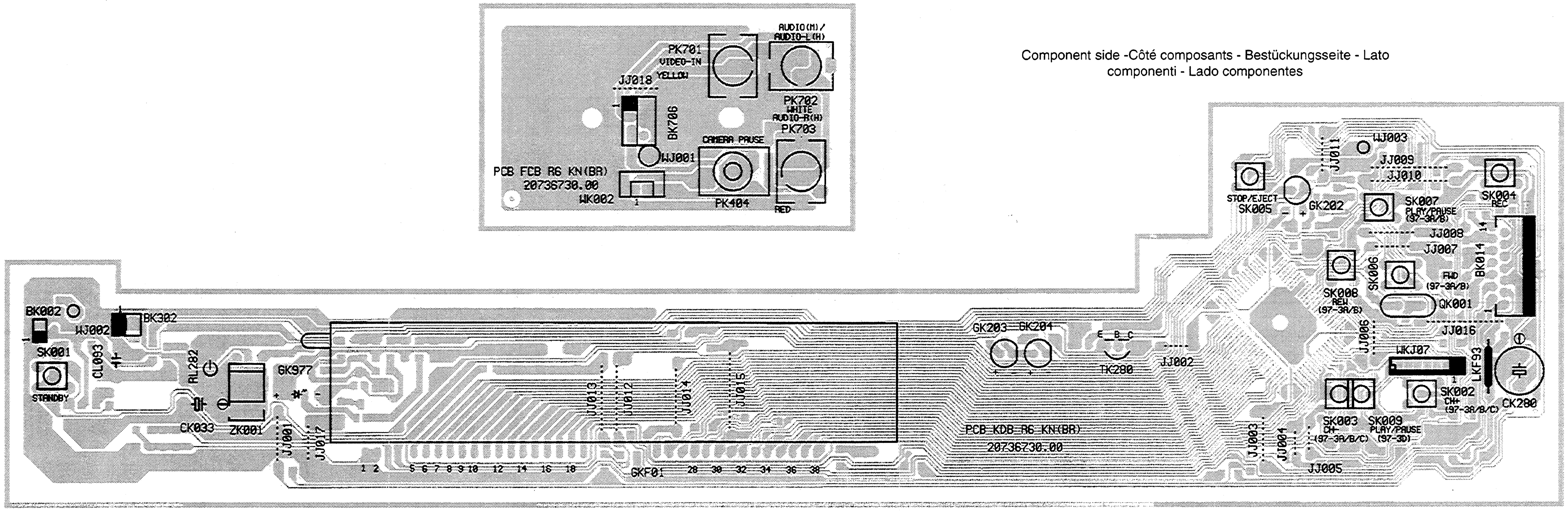

GKF01
BJ446GK
IK001
87pp71f
UH+
UH-
+5V
RLF94 VAL
RJF94 VAL
RKF94 VAL
CLF94 VAL
CL067 470pF
CL068 470pF
CL069 470pF
CL070 470pF
LKF93 VAL
RLF93 5K6
10nF CLF93
RK071 10k
CK071 VAL
RK072 10k
CK072 VAL
SK004 REC
SK008 REW
JKC01 0R0
SK003 CH-
SK002 CH+
SK001 STANDBY
SK007 PLAY/PAUSE
SK006 FWD
SK005 STOP/EJECT
SK009 PLAY/PAUSE
JKD01
WKJ07
RJ27 10k
RJ28 10k
RJ29 10k
RJ30 10k
RJ31 10k
RJ32 10k
GND
JKJ01 0R0
JKJ02 0R0
JKP01 0R0
JKP02 0R0
MODEL RL281
T5 6R8
R6 3R9
Note:Jumpers with "VAL" are for preparation.
CBC (CABLE BOX)
+6V/5V
GK202 DEV
CK280 470UF
JK251 0R0
JK261 VAL
GK203 DEV
RK251 VAL
GK204 DEV
JK201 VAL
RJ280 1k2
RJ206 10k
DK280 LL4148
RK280 0R
TK206 2SA1162
TK280 BC337
RL206 220R
RL280 3K
RL281 6R8
RL282 VAL
CBC OUT
CBC IN
CL033 100nF
GK977
RK977 0R
RJ977 15K
RK978 39K
LTL4221NLC
TK977 BC858B
RL977 (0R)
RL978 1k
ECOLOGY FEATURE
RJF40 (2k7)
RJF49 (2k7)
CAMERA PAUSE
BK302
CK317 220pF
RL317 10k
DK317 LL4148
RJ317 27K
RK317 220
TK317 BC848C
RL318 180k
RJ318 VAL
RK318 47K
CL318 330pF
AV LINK
DJ425 LL4148
RK424 2K2
CL424 330pF
RL424 220K
BK002
CAM.P
*CL424 IS A JUMPER FOR MODEL W/O CAM.P.
RK013 1M
QK001 8MHZ
CL012 10NF
CL013 56pF
CL014 68pF
JL074
RJ074 10K
RK019 220
RK020 220
RK021 220
RK003 220
RK012 220
CJ019 100pF
RJ019 VAL
RJ020 VAL
RJ021 10K
RJ003 VAL
DK066 ZMM4.7
CL003 VAL
CL020 VAL
CL021 VAL
CL019 VAL
ZK001 PIC-21044TE2
ZK001 GP1U283X
RJ092 4K7
CJ091 VAL
RK091 220
CL091 VAL
CL093 VAL
CL092 330nF
DL091 DEV
RJ091 100R
RJ090 120R
CJ033 330nF
CK033 330UF
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
PK701 VIDEO-IN
CL797 VAL
RL797 75R
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
BK706
PK702 AUDIO(M) AUDIO-L(H)
RK795 0R
CL795 1nF
RL795 VAL
RK796 0R
CL796 1nF
RL796 VAL
PK703 AUDIO-R(H)
FCB
WJ001
PK404
WK002
CAM.PAUSE
KDB_GND
CAMERA PAUSE
FRONT CONNECTOR BOARD
KDB(L)
JLG02 0R
WJ002
MECHADECK(L) FOR R6 MODELS
KDB(R)
JLG03 0R
WJ003

TOCOM	DESCRIPTION	CBC	ECO	CAM.P	AV LINK	F.AV	FRONT TOOL	JL074	RJ074	WJ002	JLG02	MODEL
20736270	KDB R6 KN1	YES(T5)	NO	NO	NO	NO	97/3A & B	*	-	NO	NO	T5
20736280	KDB R6 KN2	YES(R6)	YES	NO	NO	NO	97/3A & B	*	-	YES	YES	R6
20781990	KDB R6 KN3	NO	NO	NO	NO	NO	97/3A & B	*	-	NO	NO	T5

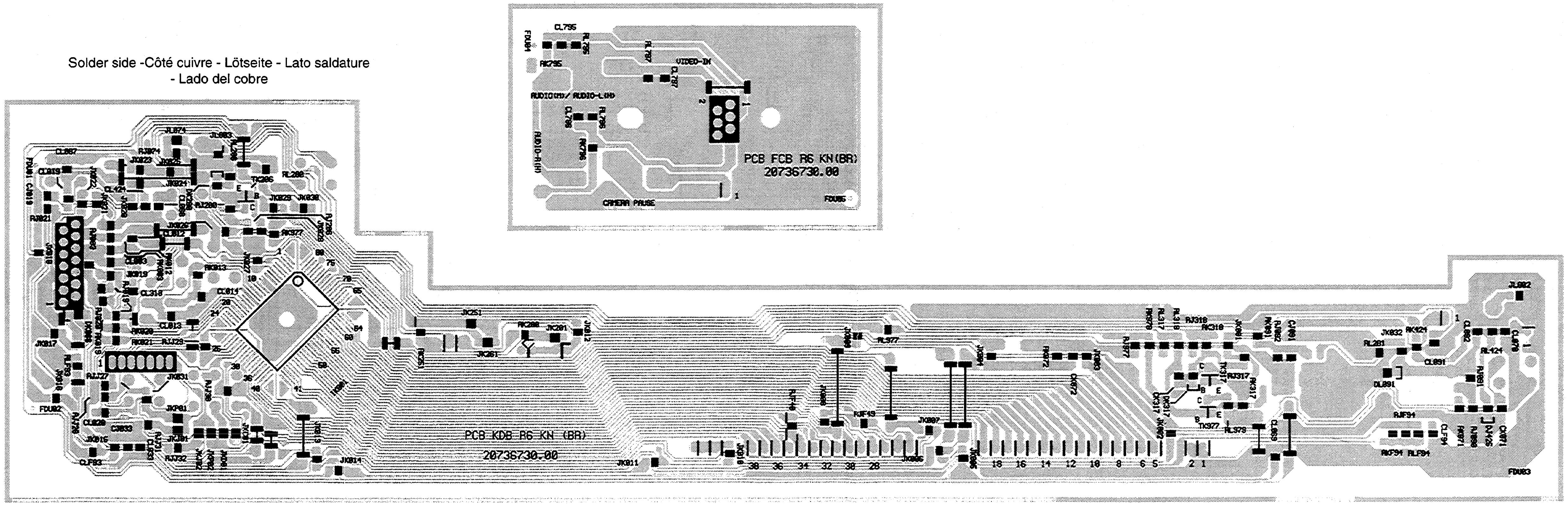
20733280 KDB/KCB KN

MODEL	JL074	RJ074
JOG/SHU	-	*
NON-JOG/SHU	*	-

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

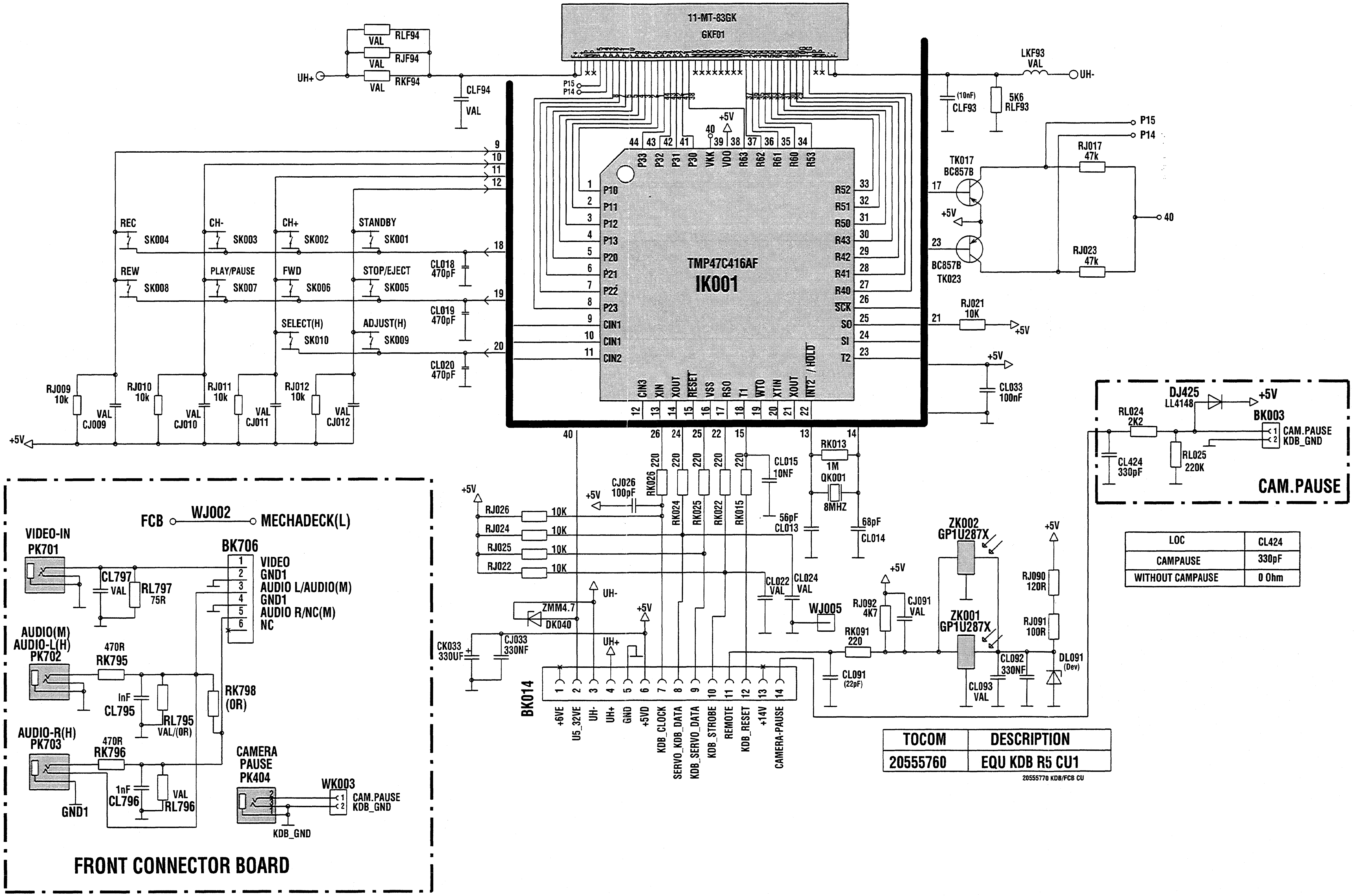
PK701
VIDEO-IN
YELLOW
AUDIO(M)/ AUDIO-L(H)
PK702
WHITE
AUDIO-R(H)
PK703
RED
JJ018
BK706
WJ001
CAMERA PAUSE
PK404
PCB FCB R6 KN(BR)
20736730.00
WK002
WJ003
JJ011
JJ009
JJ010
STOP/EJECT
SK005
GK202
SK007
PLAY/PAUSE
SK004
REC
JJ008
JJ007
BK014
SK008
REW
SK006
FWD
QK001
JJ016
JJ006
WKJ07
LKF93
CK280
SK002
CH+
SK003
CH-
SK009
PLAY/PAUSE
JJ003
JJ004
JJ005
JJ002
GK203
GK204
TK280
PCB KDB R6 KN(BR)
20736730.00
GKF01
BK002
WJ002
BK302
SK001
STANDBY
CL093
RL282
GK977
CK033
ZK001
JJ001
JJ017
JJ013
JJ012
JJ014
JJ015


Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

CL795
VIDEO-IN
AUDIO(M)/ AUDIO-L(H)
AUDIO-R(H)
CAMERA PAUSE
PCB FCB R6 KN(BR)
20736730.00
FDU05
PCB KDB R6 KN (BR)
20736730.00
FDU02
FDU03
38 36 34 32 30 28
18 16 14 12 10 8 6 5
2 1

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


11-MT-83GK
GKF01
RLF94
RJF94
RKF94
VAL
UH+
UH-
CLF94
LKF93
CLF93
(10nF)
5K6
RLF93
P15
P14
TMP47C416AF
IK001
P10
P11
P12
P13
P20
P21
P22
P23
CIN1
CIN2
CIN3
P33
P32
P31
P30
VKK
VDD
R63
R62
R61
R60
R53
R52
R51
R50
R43
R42
R41
R40
SCK
SO
SI
T2
XIN
XOUT
RESET
VSS
RSO
T1
WTO
INT2 / HOLD
+5V
TK017
BC857B
TK023
RJ017
47k
RJ023
RJ021
10K
CL033
100nF
REC
SK004
CH-
SK003
CH+
SK002
STANDBY
SK001
REW
SK008
PLAY/PAUSE
SK007
FWD
SK006
STOP/EJECT
SK005
SELECT(H)
SK010
ADJUST(H)
SK009
CL018
CL019
CL020
470pF
RJ009
RJ010
RJ011
RJ012
10k
CJ009
CJ010
CJ011
CJ012
RK026
RK024
RK025
RK022
RK015
220
CL015
10NF
RK013
1M
QK001
8MHZ
56pF
CL013
68pF
CL014
CJ026
100pF
RJ026
RJ024
RJ025
RJ022
CL022
CL024
WJ005
ZMM4.7
DK040
CK033
330UF
CJ033
330NF
BK014
+6VE
U5_32VE
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
RJ092
4K7
CJ091
RK091
CL091
(22pF)
ZK002
GP1U287X
ZK001
RJ090
120R
RJ091
100R
CL092
330NF
CL093
DL091
(Dev)
DJ425
LL4148
RL024
2K2
CL424
330pF
RL025
220K
BK003
CAM.PAUSE
KDB_GND
FCB
WJ002
MECHADECK(L)
VIDEO-IN
PK701
CL797
RL797
75R
BK706
VIDEO
GND1
AUDIO L/AUDIO(M)
AUDIO R/NC(M)
NC
AUDIO(M)
AUDIO-L(H)
PK702
470R
RK795
InF
CL795
RL795
VAL/(0R)
RK798
(0R)
AUDIO-R(H)
PK703
RK796
1nF
CL796
RL796
CAMERA PAUSE
PK404
WK003
FRONT CONNECTOR BOARD

CAM.PAUSE

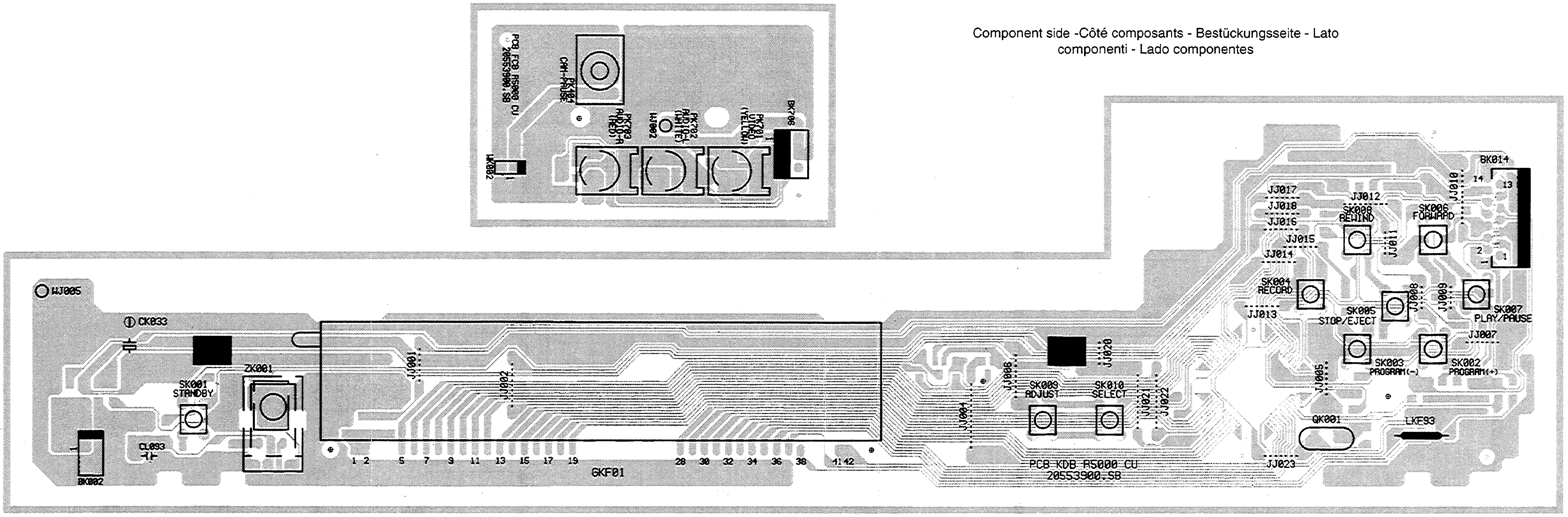
LOC	CL424
CAMPAUSE	330pF
WITHOUT CAMPAUSE	0 Ohm

TOCOM	DESCRIPTION
20555760	EQU KDB R5 CU1

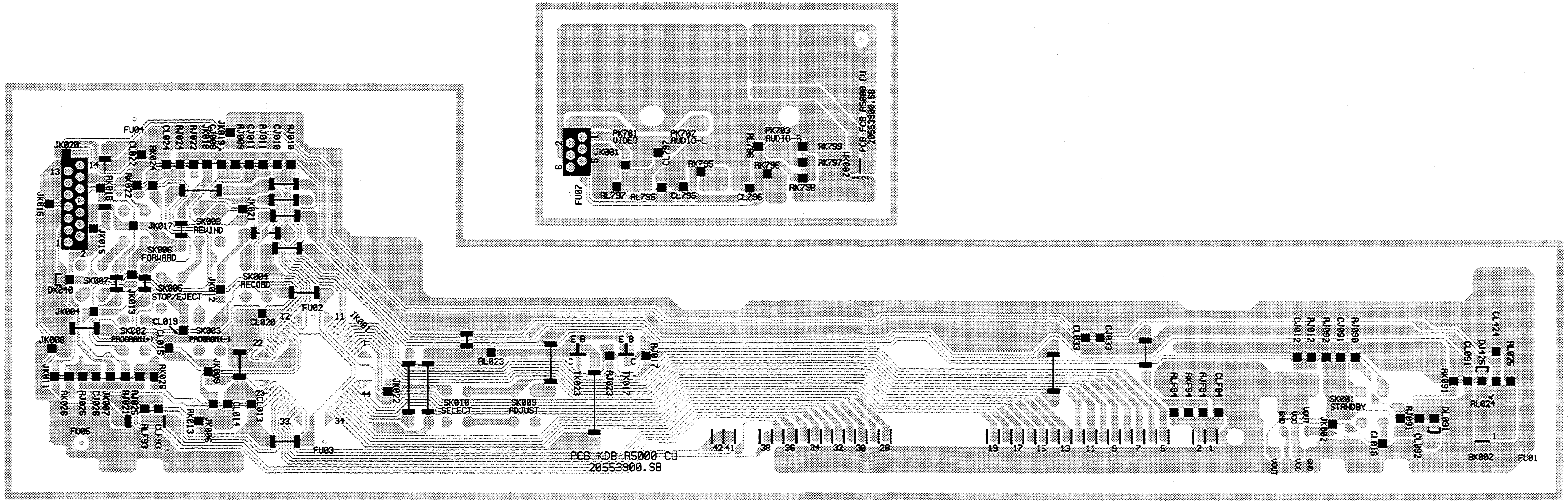
20555770 KDB/FCB CU

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

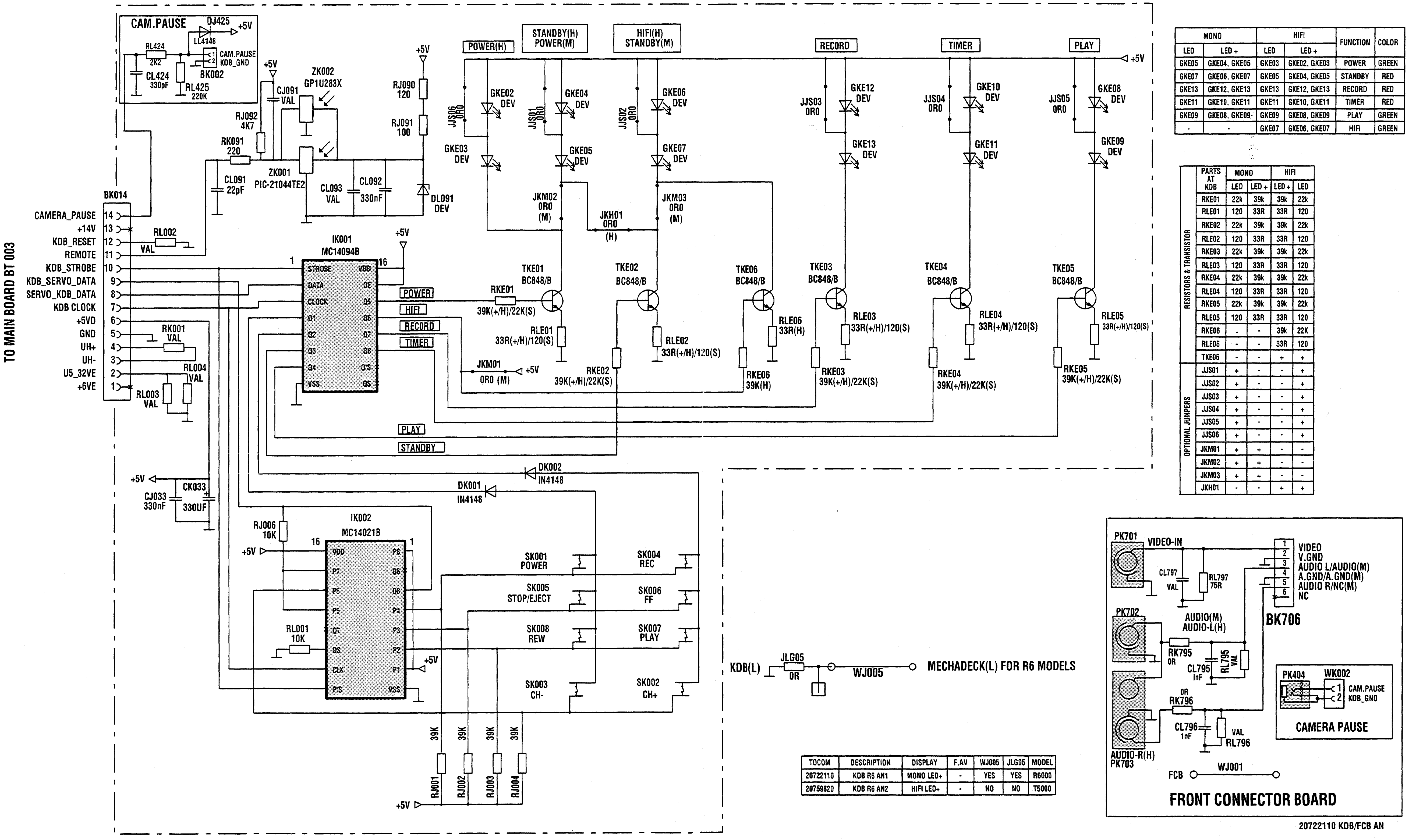

PCB FCB R5000 CU
20553900.SB
PK704
CAM-PAUSE
PK703
AUDIO-R
(RED)
PK702
AUDIO-L
(WHITE)
PK701
VIDEO
(YELLOW)
WJ002
BK706
WJ005
CK033
SK001
STANDBY
ZK001
CL033
BK002
JJ001
JJ002
GKF01
JJ017
JJ018
JJ016
JJ015
JJ014
JJ012
SK008
REWIND
SK006
FORWARD
JJ010
BK014
SK004
RECORD
JJ013
SK005
STOP/EJECT
JJ008
JJ009
SK007
PLAY/PAUSE
JJ007
JJ020
JJ019
SK009
ADJUST
SK010
SELECT
JJ021
JJ022
JJ004
SK003
PROGRAM(-)
SK002
PROGRAM(+)
JJ005
QK001
LKF93
JJ023
PCB KDB R5000 CU
20553900.SB

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB FCB R5000 CU
20553900.SB
PK701
VIDEO
PK702
AUDIO-L
PK703
AUDIO-R
JK001
FU07
RK795
RK796
RK797
RK798
RK799
RL797
RL795
CL795
CL796
WK002
JK020
FU04
JK016
SK008
REWIND
SK006
FORWARD
SK007
SK005
STOP/EJECT
SK004
RECORD
DK040
JK004
JK008
SK002
PROGRAM(+)
SK003
PROGRAM(-)
FU05
FU02
FU03
RL023
SK010
SELECT
SK009
ADJUST
PCB KDB R5000 CU
20553900.SB
SK001
STANDBY
BK002
FU01

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

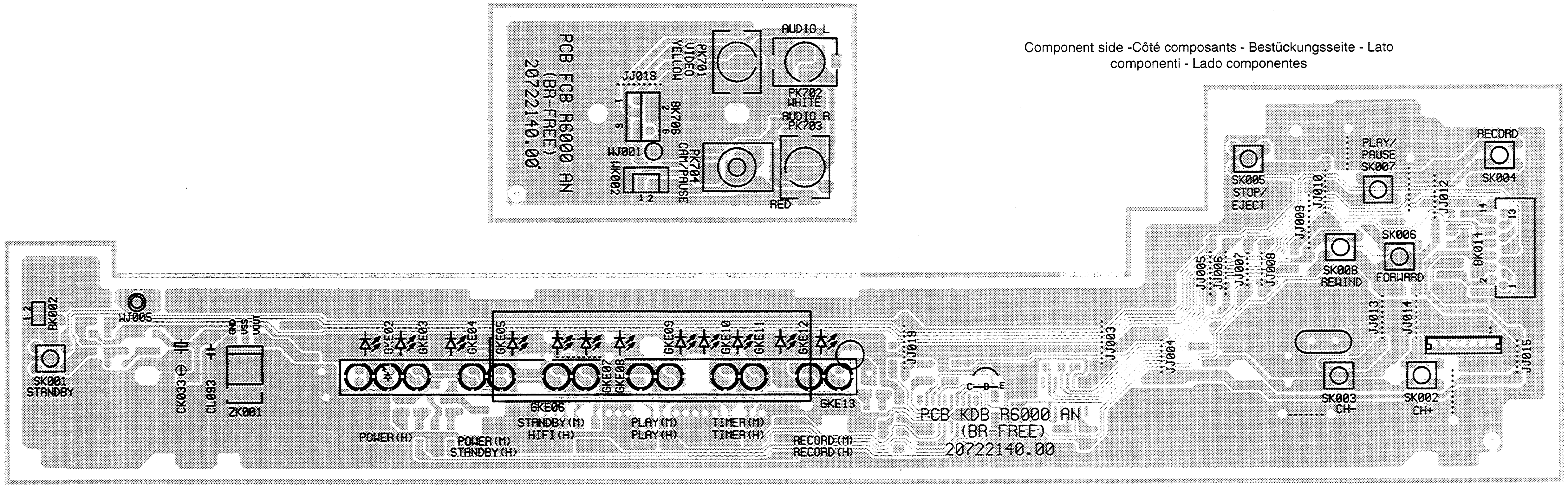

TO MAIN BOARD BT 003
BK014
CAMERA_PAUSE 14
+14V 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE 1
CAM.PAUSE
DJ425 LL4148
+5V
RL424 2K2
CL424 330pF
RL425 220K
BK002
CAM.PAUSE
KDB_GND
ZK002 GP1U283X
CJ091 VAL
RJ092 4K7
RK091 220
CL091 22pF
ZK001 PIC-21044TE2
CL093 VAL
CL092 330nF
RJ090 120
RJ091 100
DL091 DEV
RL002 VAL
RK001 VAL
RL004 VAL
RL003 VAL
IK001 MC14094B
STROBE DATA CLOCK Q1 Q2 Q3 Q4 VSS VDD OE Q5 Q6 Q7 Q8 Q'S QS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
JJS06 ORO
JJS01 ORO
JJS02 ORO
JJS03 ORO
JJS04 ORO
JJS05 ORO
GKE02 DEV
GKE03 DEV
GKE04 DEV
GKE05 DEV
GKE06 DEV
GKE07 DEV
GKE08 DEV
GKE09 DEV
GKE10 DEV
GKE11 DEV
GKE12 DEV
GKE13 DEV
JKM02 ORO (M)
JKH01 ORO (H)
JKM03 ORO (M)
JKM01 ORO (M)
TKE01 BC848/B
TKE02 BC848/B
TKE06 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
RKE01 39K(+/H)/22K(S)
RLE01 33R(+/H)/120(S)
RKE02 39K(+/H)/22K(S)
RLE02 33R(+/H)/120(S)
RLE06 33R(H)
RKE06 39K(H)
RLE03 33R(+/H)/120(S)
RKE03 39K(+/H)/22K(S)
RLE04 33R(+/H)/120(S)
RKE04 39K(+/H)/22K(S)
RLE05 33R(+/H)/120(S)
RKE05 39K(+/H)/22K(S)
CJ033 330nF
CK033 330UF
DK002 IN4148
DK001 IN4148
RJ006 10K
IK002 MC14021B
VDD P7 P6 P5 Q7 DS CLK P/S P8 Q6 Q8 P4 P3 P2 P1 VSS
RL001 10K
SK001 POWER
SK005 STOP/EJECT
SK008 REW
SK003 CH-
SK004 REC
SK006 FF
SK007 PLAY
SK002 CH+
39K 39K 39K 39K
RJ001 RJ002 RJ003 RJ004
KDB(L)
JLG05 0R
WJ005
MECHADECK(L) FOR R6 MODELS
PK701 VIDEO-IN
CL797 VAL
RL797 75R
BK706
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
PK702
AUDIO(M) AUDIO-L(H)
RK795 0R
CL795 1nF
RL795 VAL
0R RK796
CL796 1nF
VAL RL796
AUDIO-R(H) PK703
FCB
WJ001
PK404
WK002
CAM.PAUSE
KDB_GND
CAMERA PAUSE
FRONT CONNECTOR BOARD
20722110 KDB/FCB AN

MONO		HIFI		FUNCTION	COLOR
LED	LED +	LED	LED +		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13	GKE12, GKE13	RECORD	RED
GKE11	GKE10, GKE11	GKE11	GKE10, GKE11	TIMER	RED
GKE09	GKE08, GKE09	GKE09	GKE08, GKE09	PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

	PARTS AT KDB	MONO		HIFI	
		LED	LED +	LED +	LED
RESISTORS & TRANSISTOR	RKE01	22k	39k	39k	22k
	RLE01	120	33R	33R	120
	RKE02	22k	39k	39k	22k
	RLE02	120	33R	33R	120
	RKE03	22k	39k	39k	22k
	RLE03	120	33R	33R	120
	RKE04	22k	39k	39k	22k
	RLE04	120	33R	33R	120
	RKE05	22k	39k	39k	22k
	RLE05	120	33R	33R	120
	RKE06	-	-	39k	22K
	RLE06	-	-	33R	120
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	-	+
	JJS02	+	-	-	+
	JJS03	+	-	-	+
	JJS04	+	-	-	+
	JJS05	+	-	-	+
	JJS06	+	-	-	+
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

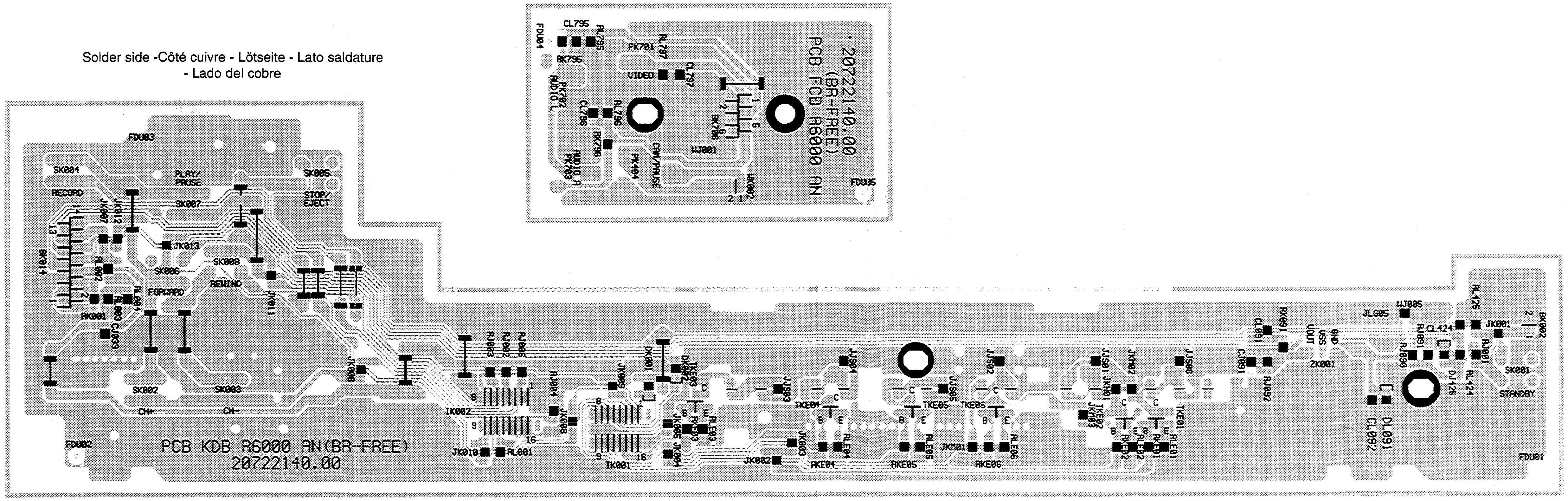
TOCOM	DESCRIPTION	DISPLAY	F.AV	WJ005	JLG05	MODEL
20722110	KDB R6 AN1	MONO LED+	-	YES	YES	R6000
20759820	KDB R6 AN2	HIFI LED+	-	NO	NO	T5000

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR


AUDIO L
PK701
VIDEO
YELLOW
PK702
WHITE
AUDIO R
PK703
RED
PK704
CAM/PAUSE
JJ018
BK706
WJ001
WK002
PCB FCB R6000 AN
(BR-FREE)
20722140.00
RECORD
PLAY/
PAUSE
SK007
SK005
STOP/
EJECT
SK004
SK006
SK008
REWIND
FORWARD
BK014
SK003
CH-
SK002
CH+
SK001
STANDBY
BK002
WJ005
CK033
CL083
ZK001
GKE06
GKE13
POWER (H)
POWER (M)
STANDBY (H)
STANDBY (M)
HIFI (H)
PLAY (M)
PLAY (H)
TIMER (M)
TIMER (H)
RECORD (M)
RECORD (H)
PCB KDB R6000 AN
(BR-FREE)
20722140.00

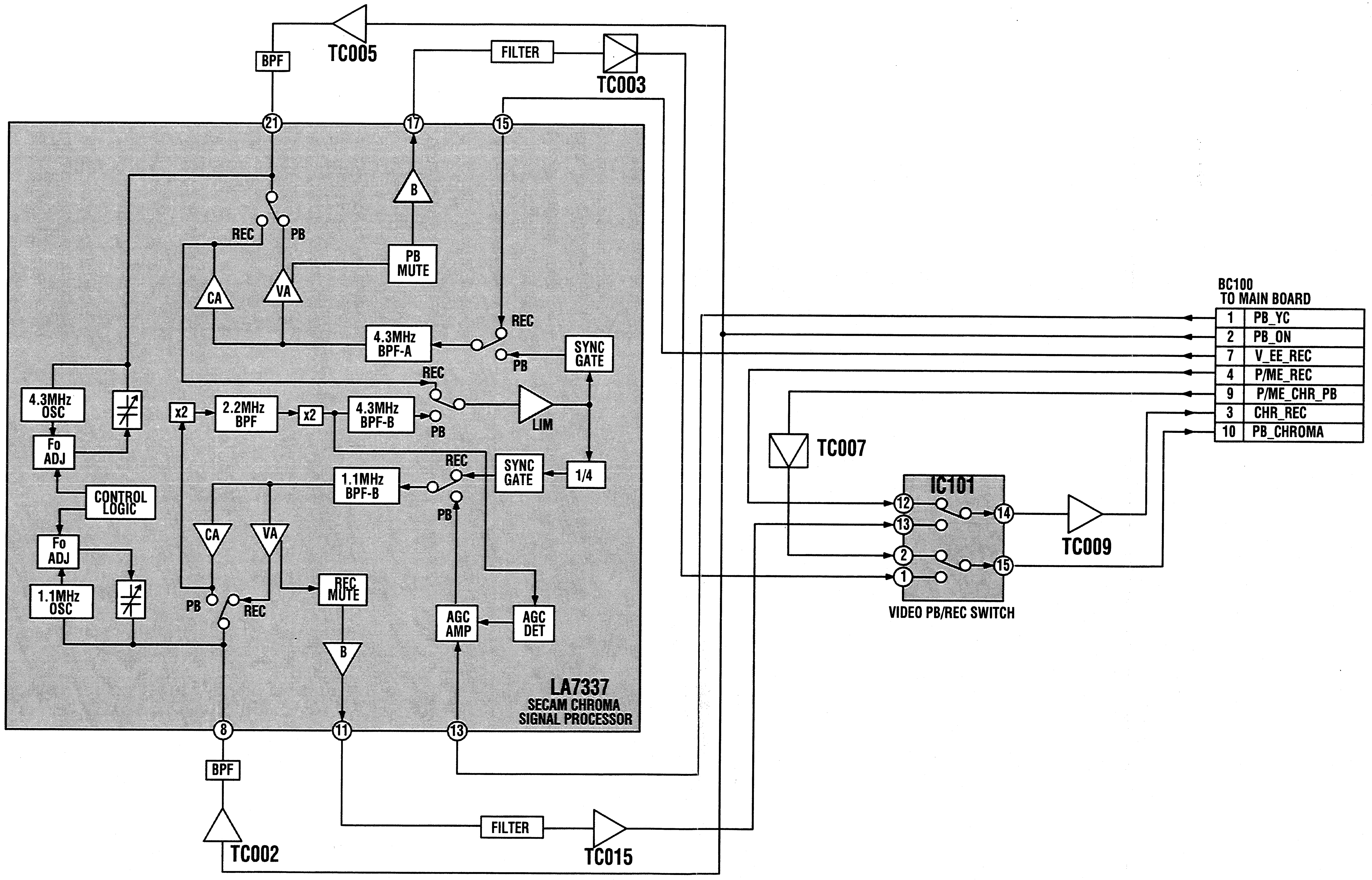
Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB FCB R6000 AN
(BR-FREE)
20722140.00
PK701
VIDEO
CL795
RK795
FDU04
FDU05
CAM/PAUSE
WJ001
WK002
FDU03
SK004
RECORD
PLAY/
PAUSE
SK007
SK005
STOP/
EJECT
BK014
JK013
SK006
SK008
FORWARD
REWIND
SK002
CH+
SK003
CH-
FDU02
PCB KDB R6000 AN(BR-FREE)
20722140.00
IK002
IK001
JK010
RL001
RKE04
RKE05
RKE06
TKE04
TKE05
TKE06
ZK001
WJ005
JLG05
BK002
JK001
SK001
STANDBY
DL091
CL092
FDU01

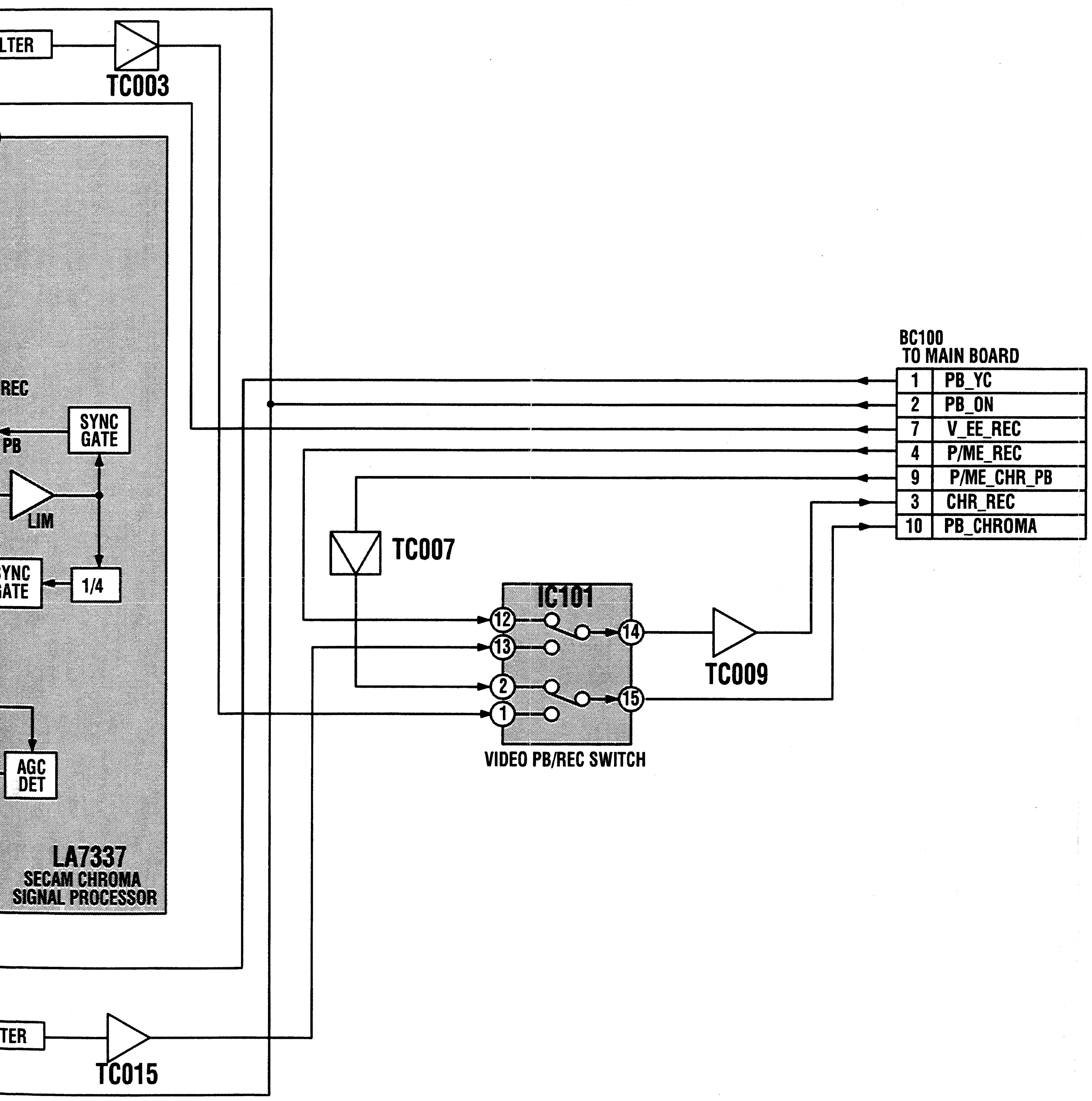
SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


TC005
BPF
FILTER
TC003
21
17
15
B
REC
PB
PB MUTE
CA
VA
REC
4.3MHz BPF-A
PB
SYNC GATE
REC
4.3MHz OSC
x2
2.2MHz BPF
x2
4.3MHz BPF-B
PB
LIM
Fo ADJ
REC
SYNC GATE
1/4
1.1MHz BPF-B
CONTROL LOGIC
PB
CA
VA
Fo ADJ
REC MUTE
1.1MHz OSC
PB
REC
AGC AMP
AGC DET
B
LA7337
SECAM CHROMA SIGNAL PROCESSOR
8
11
13
BPF
TC002
FILTER
TC015
BC100
TO MAIN BOARD
1 PB_YC
2 PB_ON
7 V_EE_REC
4 P/ME_REC
9 P/ME_CHR_PB
3 CHR_REC
10 PB_CHROMA
TC007
IC101
12
13
2
1
14
15
TC009
VIDEO PB/REC SWITCH

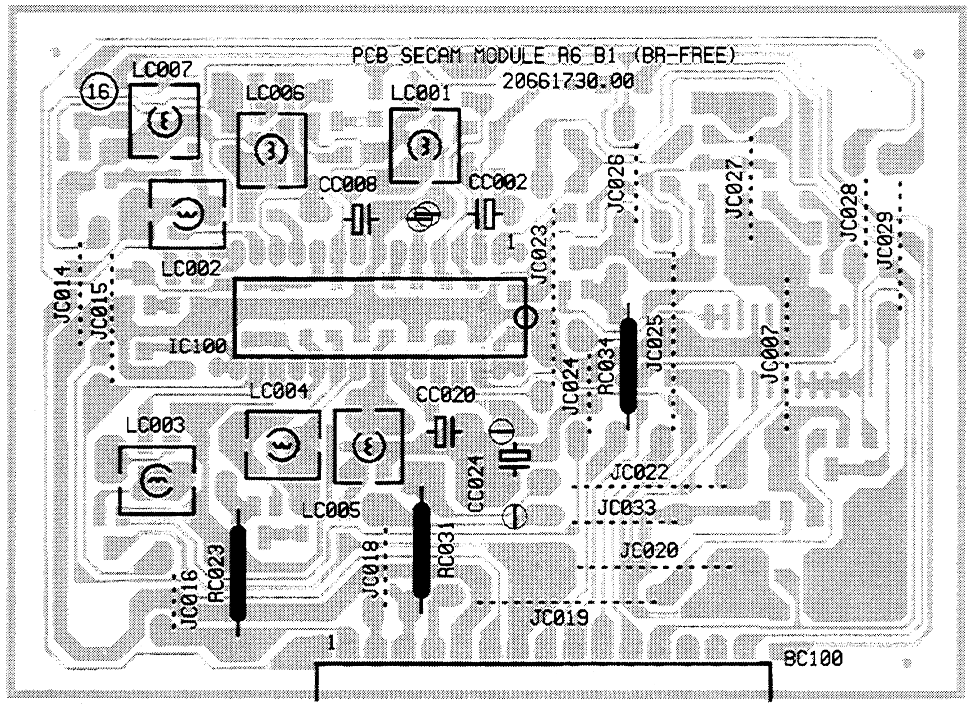
ECAM - PIASTRA SECAM - PLATINA SECAM

CHEMA A BLOCCHI - ESQUEMA DE BLOQUES



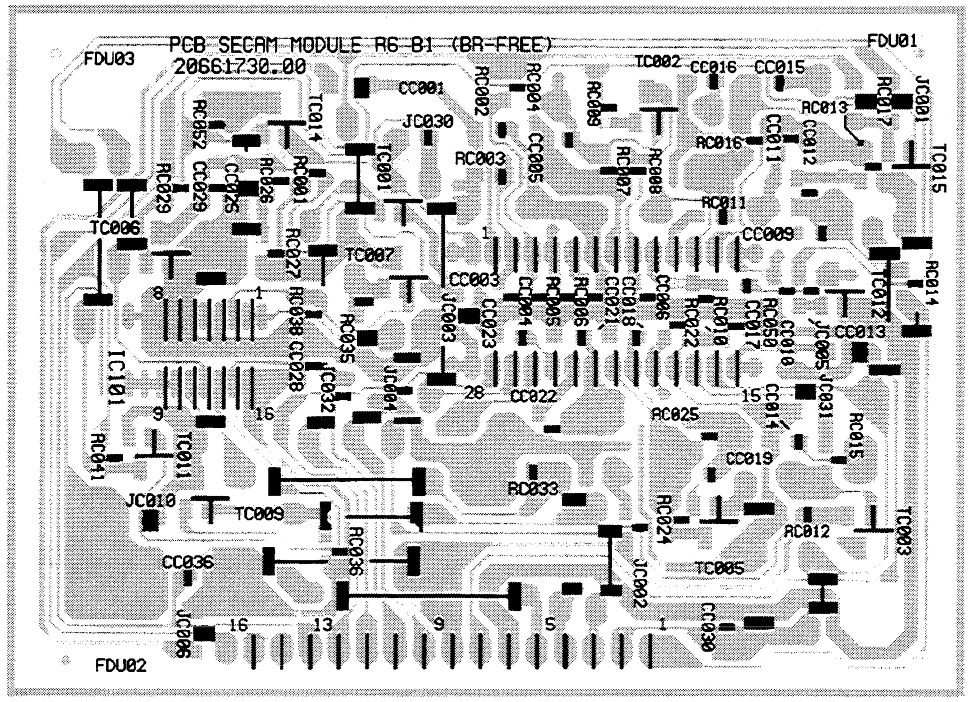
LTER
TC003
REC
SYNC GATE
PB
LIM
YNC ATE
1/4
AGC DET
LA7337
SECAM CHROMA SIGNAL PROCESSOR
TER
TC015
TC007
IC101
12
13
2
1
14
15
VIDEO PB/REC SWITCH
TC009
BC100
TO MAIN BOARD
1 PB_YC
2 PB_ON
7 V_EE_REC
4 P/ME_REC
9 P/ME_CHR_PB
3 CHR_REC
10 PB_CHROMA

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes



PCB SECAM MODULE R6 B1 (BR-FREE)
20661730.00
16
LC007
LC006
LC001
CC008
CC002
LC002
IC100
JC014
JC015
JC023
JC026
JC027
JC028
JC029
JC024
RC034
JC025
JC007
LC004
CC020
LC003
CC024
LC005
JC022
JC033
JC020
JC016
RC023
JC018
RC031
JC019
BC100
1

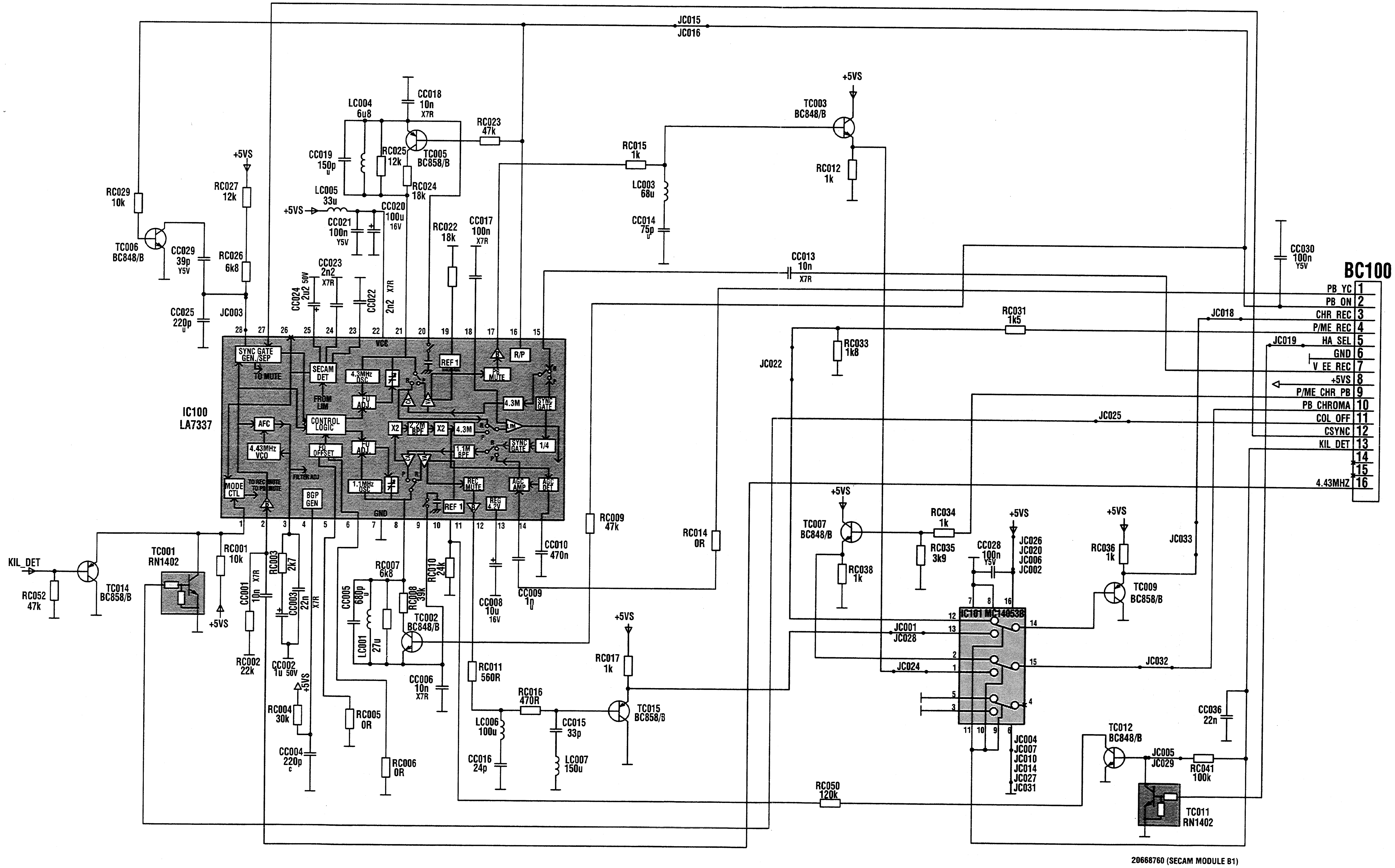
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre



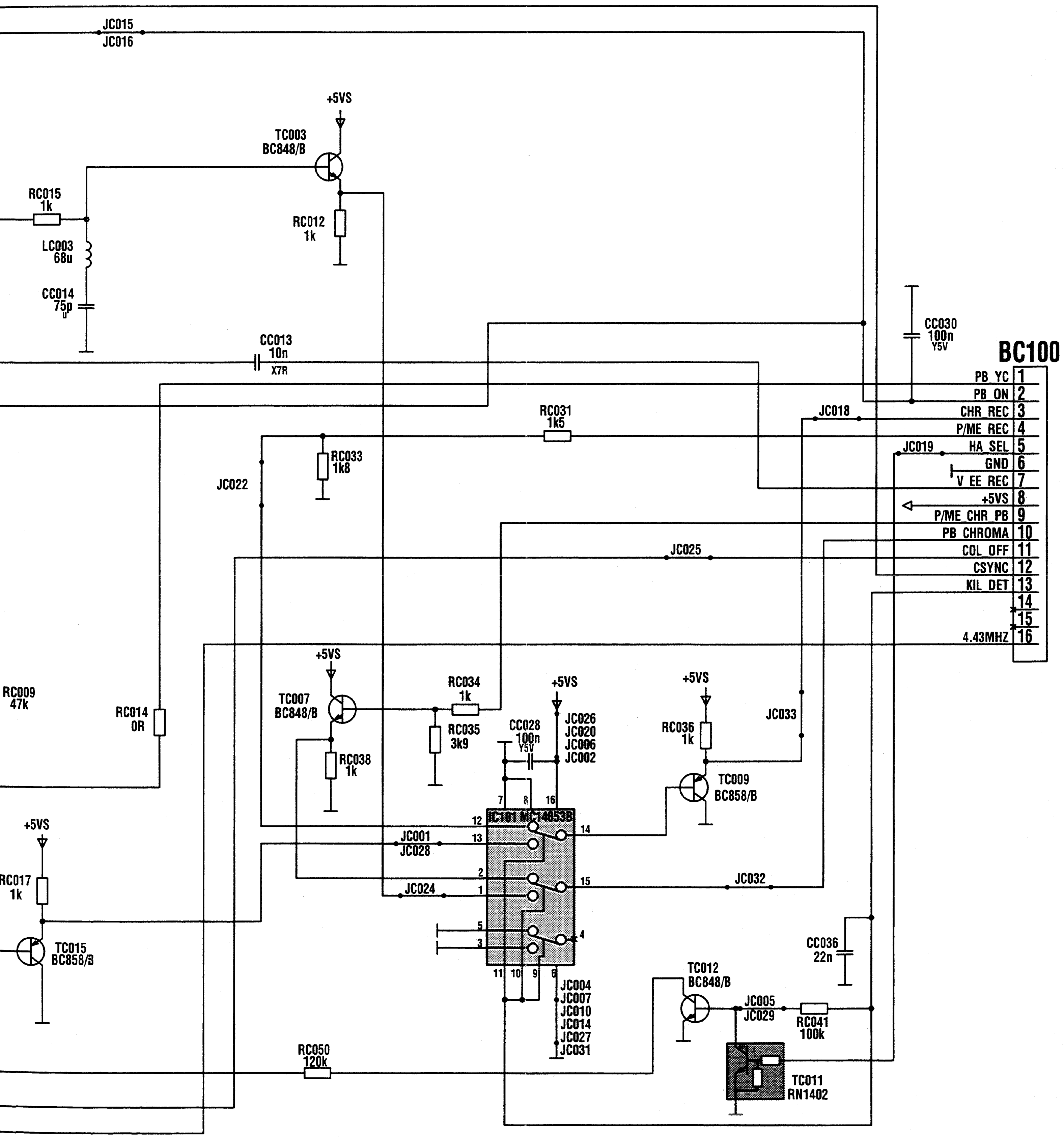
PCB SECAM MODULE R6 B1 (BR-FREE)
20661730.00
FDU01
FDU02
FDU03
TC002
CC016
CC015
CC001
RC002
RC004
RC009
JC001
RC017
RC013
TC014
JC030
TC015
RC016
CC011
CC012
RC052
RC001
RC003
CC005
RC007
RC008
RC029
CC029
RC026
TC001
RC011
TC006
CC009
RC014
RC027
TC007
CC003
TC012
RC038
CC028
CC023
RC035
RC005
CC021
CC018
CC006
RC010
RC022
RC050
CC017
CC010
JC005
CC013
IC101
JC003
JC004
JC032
CC022
28
15
16
8
9
1
CC014
JC031
RC015
RC025
RC041
TC011
CC019
RC033
JC010
TC009
RC036
RC024
RC012
TC003
CC036
JC002
TC005
JC006
CC030
13
5

SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - ESQUEMA


JC015
JC016
+5VS
TC003
BC848/B
RC012
1k
LC004
6u8
CC018
10n
X7R
RC023
47k
CC019
150p
RC025
12k
TC005
BC858/B
RC024
18k
LC005
33u
CC020
100u
16V
CC021
100n
Y5V
RC015
1k
LC003
68u
CC014
75p
RC029
10k
RC027
12k
TC006
BC848/B
CC029
39p
Y5V
RC026
6k8
CC025
220p
JC003
CC024
2u2 50V
CC023
2n2
X7R
CC022
2n2
X7R
RC022
18k
CC017
100n
X7R
CC013
10n
X7R
CC030
100n
Y5V
BC100
PB YC 1
PB ON 2
CHR REC 3
P/ME REC 4
HA SEL 5
GND 6
V EE REC 7
+5VS 8
P/ME CHR PB 9
PB CHROMA 10
COL OFF 11
CSYNC 12
KIL DET 13
14
15
4.43MHZ 16
JC018
JC019
JC025
JC022
RC031
1k5
RC033
1k8
IC100
LA7337
SYNC GATE GEN./SEP
TO MUTE
SECAM DET
FROM LIM
4.3MHz OSC
FU ADJ
REF 1
PB MUTE
R/P
4.3M
SYNC GATE
AFC
CONTROL LOGIC
X2
2.2M BPF
X2
4.3M
LIM
4.43MHz VCO
FU OFFSET
FU ADJ
1.1M BPF
SYNC GATE
1/4
MODE CTL
TO REC MUTE
TO PB MUTE
FILTER ADJ
1.1MHz OSC
REC MUTE
AGC AMP
AGC DET
BGP GEN
REF 1
REG 4.2V
VCC
GND
KIL_DET
RC052
47k
TC014
BC858/B
TC001
RN1402
+5VS
RC001
10k
CC001
10n
X7R
RC003
2k7
CC003
22n
X7R
RC002
22k
CC002
1u 50V
RC004
30k
CC004
220p
RC005
0R
RC006
0R
CC005
680p
LC001
27u
RC007
6k8
RC008
39k
TC002
BC848/B
RC010
24k
CC006
10n
X7R
CC008
10u
16V
CC009
1n
CC010
470n
RC009
47k
RC011
560R
RC016
470R
LC006
100u
CC015
33p
LC007
150u
CC016
24p
RC017
1k
TC015
BC858/B
RC014
0R
TC007
BC848/B
RC038
1k
RC034
1k
RC035
3k9
CC028
100n
Y5V
JC026
JC020
JC006
JC002
IC101 MC14053B
JC001
JC028
JC024
JC004
JC007
JC010
JC014
JC027
JC031
RC036
1k
TC009
BC858/B
JC033
JC032
CC036
22n
TC012
BC848/B
JC005
JC029
RC041
100k
TC011
RN1402
RC050
120k
20668760 (SECAM MODULE B1)

PIASTRA SECAM - PLATINA SECAM


JC015
JC016
+5VS
TC003
BC848/B
RC015
1k
RC012
1k
LC003
68u
CC014
75p
CC013
10n
X7R
CC030
100n
Y5V
BC100
PB YC 1
PB ON 2
CHR REC 3
P/ME REC 4
HA SEL 5
GND 6
V EE REC 7
+5VS 8
P/ME CHR PB 9
PB CHROMA 10
COL OFF 11
CSYNC 12
KIL DET 13
14
15
4.43MHZ 16
RC031
1k5
JC018
JC019
RC033
1k8
JC022
JC025
RC009
47k
RC014
0R
TC007
BC848/B
RC034
1k
RC035
3k9
RC038
1k
CC028
100n
Y5V
JC026
JC020
JC006
JC002
RC036
1k
JC033
TC009
BC858/B
IC101 MC14053B
JC001
JC028
JC024
JC032
RC017
1k
TC015
BC858/B
CC036
22n
TC012
BC848/B
JC004
JC007
JC010
JC014
JC027
JC031
JC005
JC029
RC041
100k
TC011
RN1402
RC050
120k

20668760 (SECAM MODULE B1)

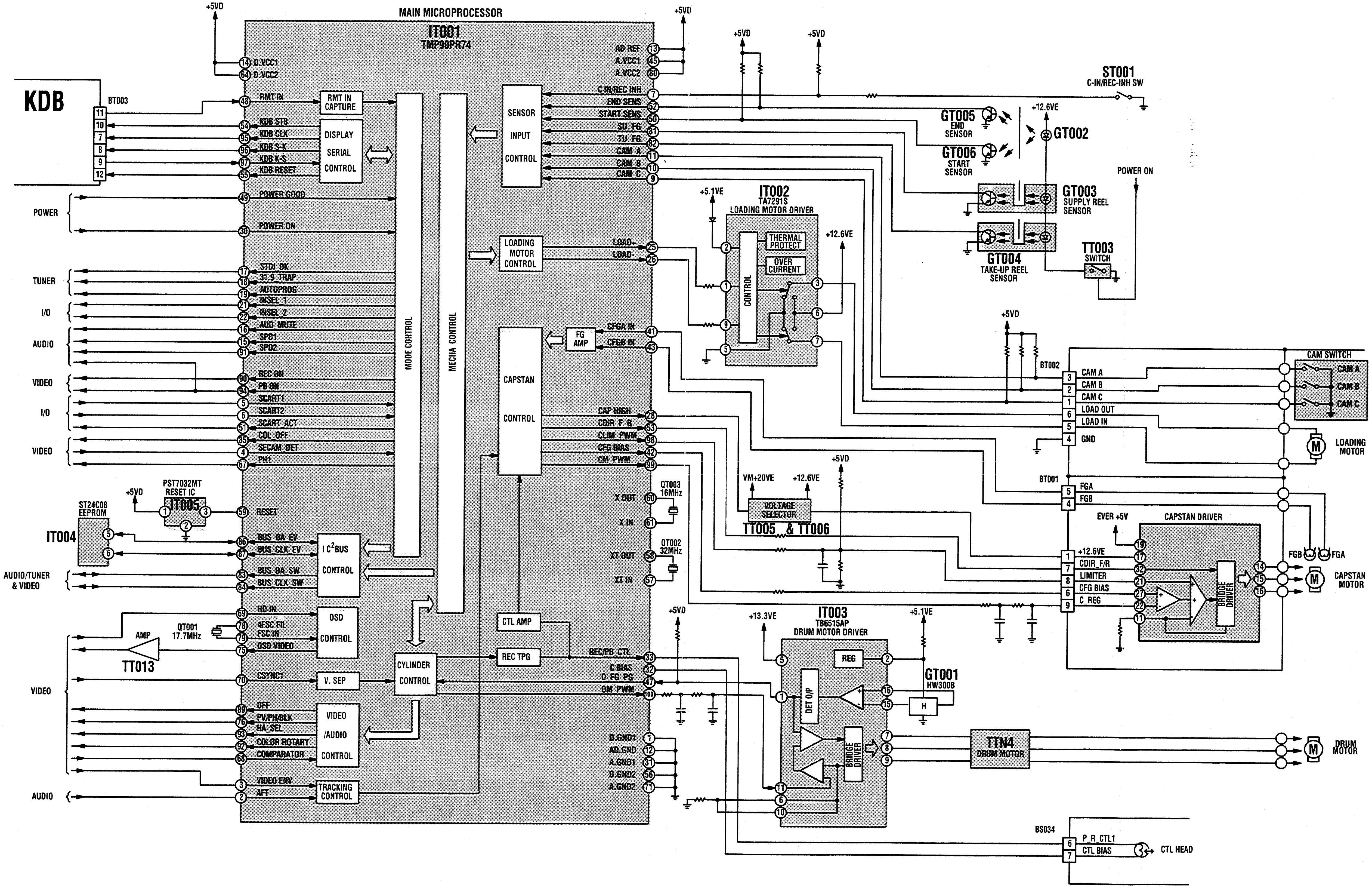
MEASUREMENTS SECAM SUB BOARD - MESURES PLATINE SECAM - MESSUNGEN SUB MODUL SECAM - MISURE PIASTRA SECAM - MEDIDAS PLATINA

SECAM		MODE		
LOC	PIN	EE	PLAY	REC.
IC100	1	0.7	0.7	4.3
	2	1.9	1.9	1.9
	3	3.8	3.8	3.8
	4	0.5	0.4	0.5
	5	0	0	0
	6	0	0	0
	7	0	0	0
	8	2.5	2.5	2.4
	9	2.5	2.5	2.4
	10	2.3	2.3	2.3
	11	2.5	2.5	2.5
	12	4.4	4.3	4.3
	13	2.5	2.5	2.5
	14	3.1	1.9	3
	15	2.7	1.9	2.7
	16	0	5	0
	17	2.5	2.5	2.5
	18	2.2	2.2	2.2
	19	2.3	2.3	2.3
	20	2.5	2.5	2.5
	21	2.5	2.5	2.5
	22	4.9	4.9	4.9
	23	3	2.3	2.9
	24	3	2.3	2.9
	25	2	2.1	2.4
	26	NC	NC	NC
	27	0.6	0.6	0.6
	28	0.3	0.3	0.3
IC101	1	1.9	1.9	1.8
	2	0	1.5	0
	3	0	0	0
	4	NC	NC	NC
	5	0	0	0
	6	0	0	0
	7	0	0	0
	8	0	0	0
	9	0	0	4.2
	10	0	0	4.2
	11	0	0	4.2
	12	2	0	1.9
	13	3.1	3.1	3.1
	14	1.9	0	3.1
	15	0	1.5	1.8
	16	5	5	5
TC001	E	0	0	0
	B	0	0	0
	C	0.7	0.7	4.3
TC002	E	2.5	2.5	2.4
	B	0	3.1	0
	C	2.5	2.5	2.4
TC003	E	1.9	1.9	1.8
	B	2.5	2.5	2.5
	C	5	5	5
TC005	E	2.5	2.5	2.5
	B	1.9	5	1.9
	C	2.5	2.5	2.5

SECAM		MODE		
LOC	PIN	EE	PLAY	REC.
TC006	E	0	0	0
	B	0	0.7	0.7
	C	0	0	0
TC007	E	0	1.5	0
	B	0	2.1	0
	C	5	5	5
TC009	E	2.6	0.7	3.7
	B	1.9	0	3.1
	C	0	0	0
TC011	E	0	0	0
	B	0	0	0
	C	0	0	0.6
TC012	E	0	0	0
	B	0	0	0.6
	C	2.3	2.3	0
TC014	E	0.7	0.7	4.3
	B	0	0	4.2
	C	0	0	0
TC015	E	3.1	1.7	3.1
	B	2.5	2.5	2.5
	C	0	0	0

MECHA DECK CONTROL / SERVO CONTROL - GESTION / ASSERVISSEMENTS - MECHANIKSTEUERUNG / SERVO - CONTROLLO MECCANISMO / ASSERVIMENTI - SERVOMECANISMO / GESTIÒN

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES

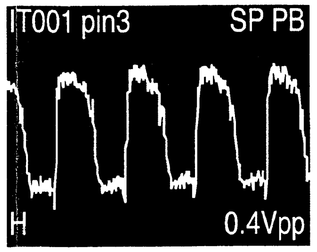

MAIN MICROPROCESSOR
IT001
TMP90PR74
+5VD
D.VCC1
D.VCC2
AD REF
A.VCC1
A.VCC2
KDB
BT003
RMT IN
RMT IN CAPTURE
KDB STB
KDB CLK
KDB S-K
KDB K-S
KDB RESET
DISPLAY SERIAL CONTROL
POWER
POWER GOOD
POWER ON
TUNER
I/O
AUDIO
VIDEO
I/O
VIDEO
STDI DK
31.9 TRAP
AUTOPROG
INSEL 1
INSEL 2
AUD MUTE
SPD1
SPD2
REC ON
PB ON
SCART1
SCART2
SCART ACT
COL OFF
SECAM DET
PH1
MODE CONTROL
MECHA CONTROL
SENSOR INPUT CONTROL
C IN/REC INH
END SENS
START SENS
SU. FG
TU. FG
CAM A
CAM B
CAM C
LOADING MOTOR CONTROL
LOAD+
LOAD-
FG AMP
CFGA IN
CFGB IN
CAPSTAN CONTROL
CAP HIGH
CDIR F R
CLIM PWM
CFG BIAS
CM PWM
QT003 16MHz
X OUT
X IN
QT002 32MHz
XT OUT
XT IN
PST7032MT RESET IC
IT005
RESET
ST24C08 EEPROM
IT004
BUS DA EV
BUS CLK EV
BUS DA SW
BUS CLK SW
I C²BUS CONTROL
AUDIO/TUNER & VIDEO
HD IN
4FSC FIL
FSC IN
OSD VIDEO
OSD CONTROL
AMP
QT001 17.7MHz
TT013
CSYNC1
V. SEP
CYLINDER CONTROL
CTL AMP
REC TPG
REC/PB CTL
C BIAS
D FG PG
DM PWM
DFF
PV/PH/BLK
HA SEL
COLOR ROTARY
COMPARATOR
VIDEO /AUDIO CONTROL
VIDEO ENV
AFT
TRACKING CONTROL
D.GND1
AD.GND
A.GND1
D.GND2
A.GND2
ST001
C-IN/REC-INH SW
GT005
END SENSOR
GT006
START SENSOR
+12.6VE
GT002
POWER ON
GT003
SUPPLY REEL SENSOR
GT004
TAKE-UP REEL SENSOR
TT003
SWITCH
+5.1VE
IT002
TA7291S
LOADING MOTOR DRIVER
CONTROL
THERMAL PROTECT
OVER CURRENT
BT002
CAM A
CAM B
CAM C
LOAD OUT
LOAD IN
GND
CAM SWITCH
LOADING MOTOR
BT001
FGA
FGB
VM+20VE
VOLTAGE SELECTOR
TT005 & TT006
EVER +5V
CAPSTAN DRIVER
CDIR_F/R
LIMITER
CFG BIAS
C_REG
BRIDGE DRIVER
CAPSTAN MOTOR
+13.3VE
IT003
TB6515AP
DRUM MOTOR DRIVER
REG
DET O/P
GT001
HW300B
H
TTN4
DRUM MOTOR
BS034
P_R_CTL1
CTL BIAS
CTL HEAD
M

MEASUREMENTS MECHA DECK CONTROL / SERVO CONTROL - MESURES GESTION / ASSERVISSEMENTS - MESSUNGEN MECHANIKSTEUERUNG / SERVO - MISURE CONTROLLO MECCANISMO - MEDIDAS SERVOMECANISMO / GESTION

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
GT001	1	1.5	1.5	1.5
	2	0.8	0.8	0.8
	3	0	0	0
	4	0	0.7	0.7
GT002	A	3.6	3.6	3.6
	C	2.5	2.4	2.4
GT003	A	2.5	2.4	2.4
	K	1.3	1.2	1.2
	C	0	0	0
	E	2.8		
GT004	A	1.3	1.2	1.2
	K	0	0	0
	C	0	0	0
	E	0.2		
GT005	A	0	0	0
	C	0.7	5	5
GT006	A	0	0	0
	C	0.7	5	5
IT001	1	0	0	0
	2	2.2	2.1	2.1
	3	0.8	2.9	2.8
	4	0	0	0
	5	0	3.9	0
	6	0	0	0
	7	5.2	5.2	5.2
	8	5.2	5.2	5.2
	9	0	0	0
	10	0	5.2	5.2
	11	0	5.2	5.2
	12	0	0	0
	13	5.1	5.2	5.2
	14	5.1	5.1	5.1
	15	0	0	0
	16	0	0	0
	17	0	0	0
	18	5	5.1	5.1
	19	0	0	0
	20	0	5.1	0
	21	5.1	5.1	5.1
	22	5.1	5.1	5.1
	23	0	0	0
	24	0	0	0
	25	5.1	5.1	5.1
	26	5.1	5.1	5.1
	27	5.1	5.1	5.1
	28	0	0	0
	29	5.1	5.1	5.1
	30	4.9	4.8	4.8
	31	0	0	0
	32	2.6	2.6	2.6
	33	2.6	2.6	2.6
	34	2.6	2.6	2.6
	35	2.6	2.6	2.5
	36	2.6	2.5	2.6
	37	2.6	2.6	2.6
	38	2.6	3.3	2.6
	39	2.4	1.8	2.4

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
IT001	40	2.6	2.6	2.6
	41	2.6	2.6	2.6
	42	2.6	2.6	2.6
	43	2.6	2.6	2.6
	44	2.6	2.6	2.6
	45	5.2	5.2	5.2
	46	5.1	2.9	2.6
	47	0.1	1.4	1.3
	48	5.1	5.1	5.1
	49	5.3	5.3	5.2
	50	0.7	4.9	5.2
	51	0	5	0.2
	52	0.7	5	5.1
	53	5.1	0	0
	54	0	0	0
	55	5.1	5.1	5.1
	56	0	0	0
	57	2.1	2.2	2.1
	58	2.7	2.7	2.7
	59	5.1	5.1	5.1
	60	2.4	2.4	2.4
	61	2.2	2.4	2.2
	62	5	5	5
	63	0.2	0.4	0.4
	64	5.1	5.1	5.1
	65	0	0	0
	66	0.1	0.1	0.1
	67	0.1	0.1	0.1
	68	0.4	0	0
	69	0	3.8	3.8
	70	0	3.5	3.8
	71	0	0	0
	72	0	0	0
	73	0	0	0
	74	4.8	5.1	5.1
	75	0	1.4	1.4
	76	0	0.2	0.2
	77	NC	NC	NC
	78	0	2.4	2.4
	79	0	2.2	2.2
	80	0	5.2	5.2
	81	5.3		
	82	5.3		
	83	0.5	4.8	4.8
	84	0.5	4.8	4.8
	85	0	0	0
	86	4.6	5.2	5.2
	87	4.8	5.2	5.2
	88	0.1	0.1	0.1
	89	0	2.9	2.9
	90	0	0	0
	91	0	0	0
	92	0		
	93	0	0.1	0.1
	94	0	4.9	0
	95	0	0	0
	96	4.1	4	
	97	5.3	5.1	5.1
	98	2.1	2	2
	99	0	2.8	2.8
	100	0	2.8	2.8

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
IT002	1	4.8	4.8	4.8
	2	5.2	5.2	5.2
	3	0.6	0.6	0.6
	4	NC	NC	NC
	5	0	0	0
	6	14	12.9	13.3
	7	0.5	0.5	0.6
	8	14	12.9	13.3
	9	4.8	4.8	4.8
IT003	1	0	1.3	1.3
	2	1.5	1.5	1.5
	3	0	0	0
	4	0	0	0
	5	14.3	13.6	13.5
	6	0	0	0
	7	14.2	10.2	10.2
	8	14.2	10.2	10.2
	9	14.2	10.2	10.2
	10	0	0	0
	11	0	2.7	2.7
	12	0	0	0
	13	NC	NC	NC
	14	3.5	3.3	3.4
	15	0.7	0.7	0.7
	16	0.8	0.8	0.8
IT004	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0
	5	5.2	5.2	5.2
	6	5.2	5.2	5.2
	7	0	0	0
	8	5.2	5.2	5.2
IT005	1	5.1	5.1	5.1
	2	0	0	0
	3	5.1	5.1	5.1
TT003	E	0	0	0
	B	0.7	0	0
	C	0	0	0
TT006	E	0	0	0
	B	0	0	0
	C	18.8	18.8	18.7
TT013	E	2	2	2
	B	1.4	1.4	1.4
	C	0	0	0



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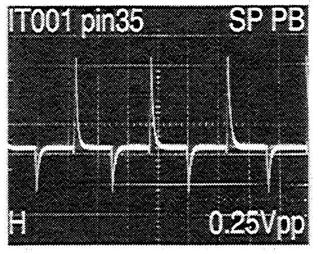

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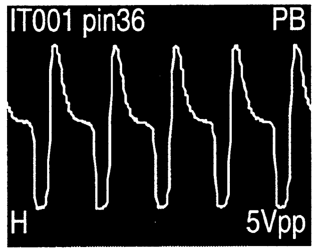

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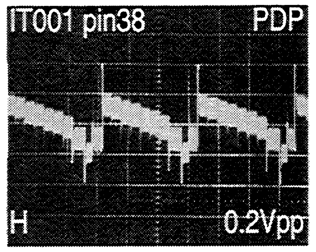

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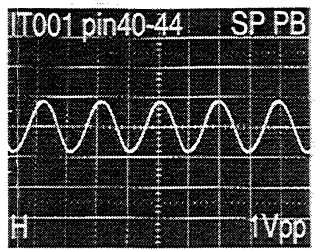

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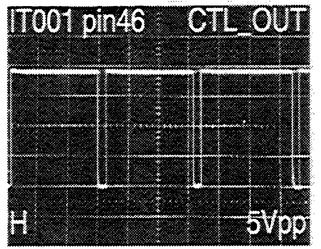

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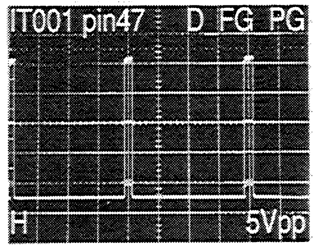

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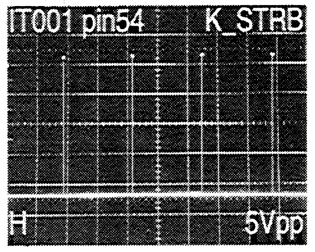

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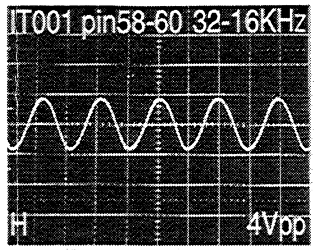

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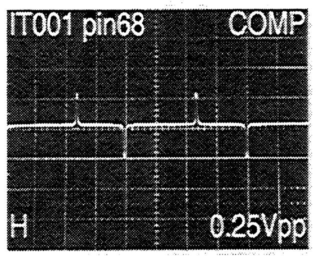

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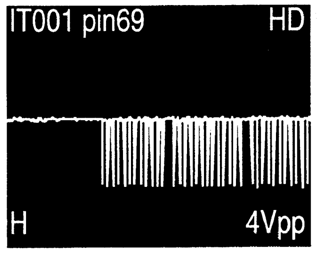

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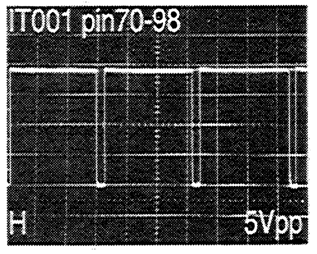

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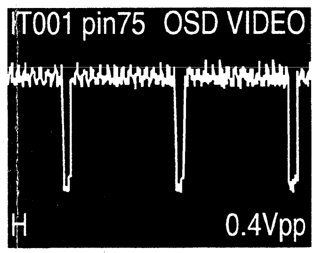

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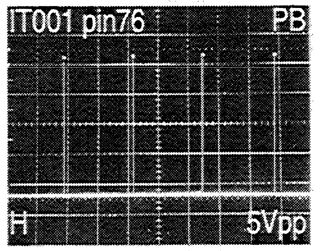

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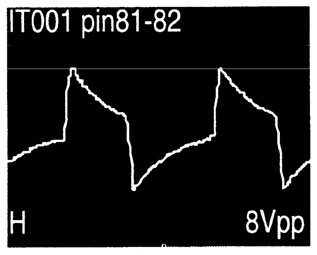

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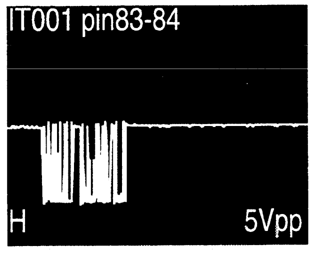

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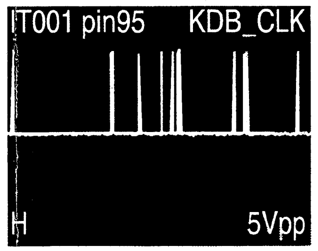

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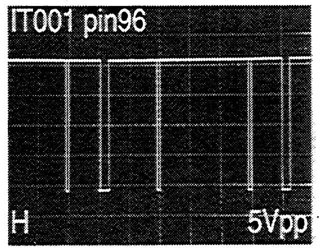

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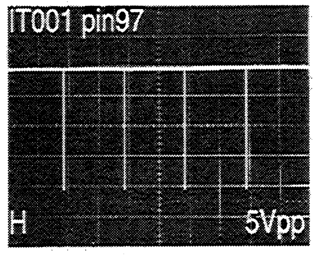

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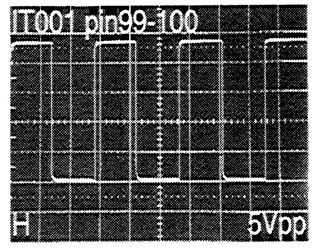

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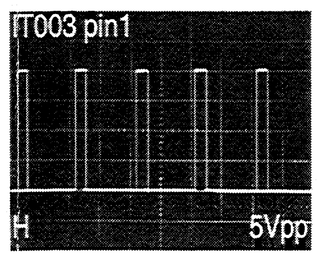

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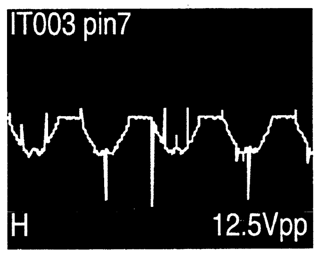

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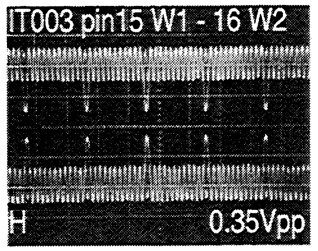

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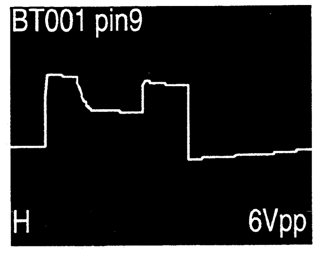
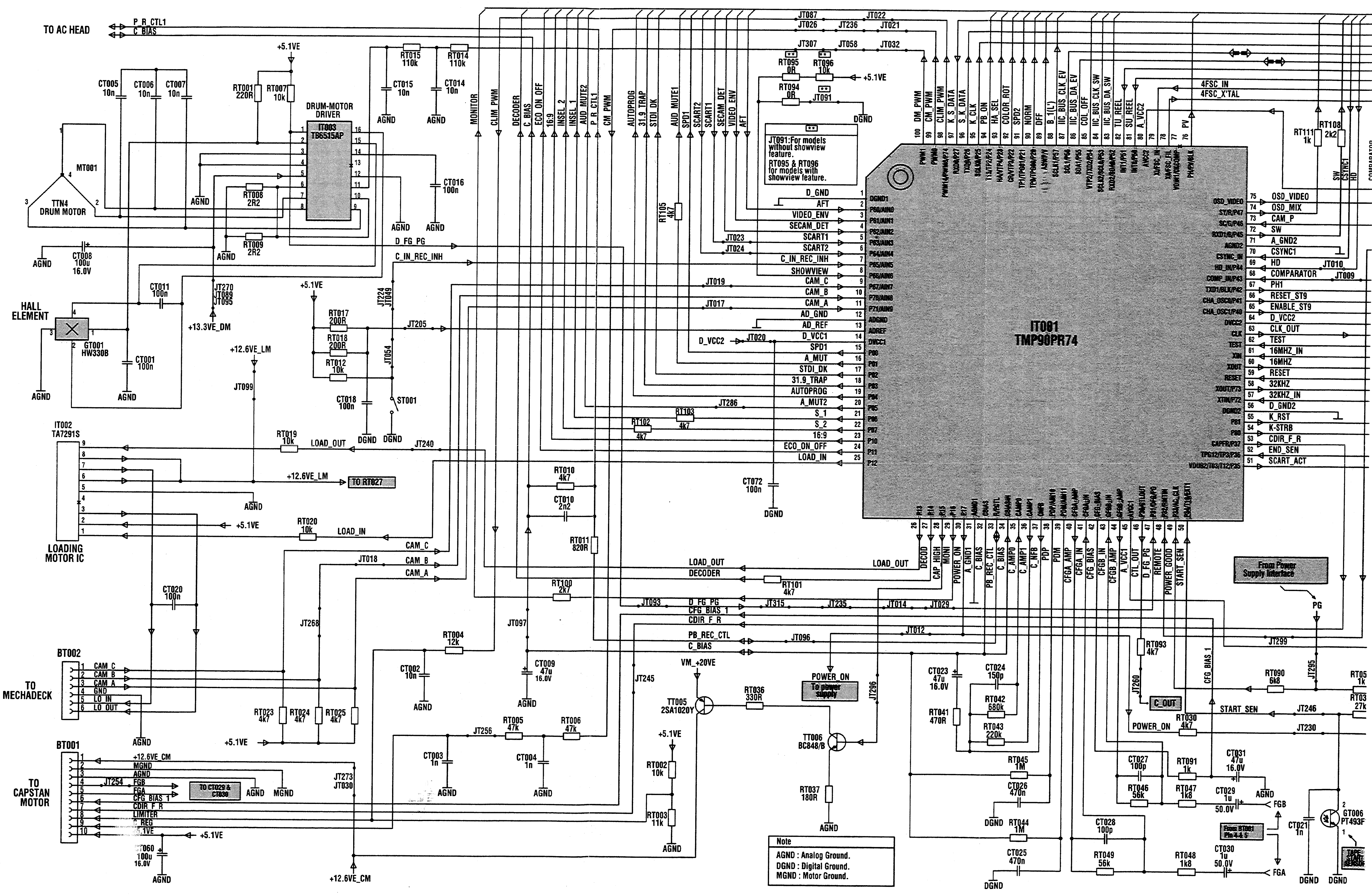


㉔

MECHA DECK CONTROL / SERVO CONTROL - GESTION / ASSERVISSEMENTS - MECHANIKSTEUERUNG / SERVO - CONTROLLO MECCANICA / SERVO - SERVOME

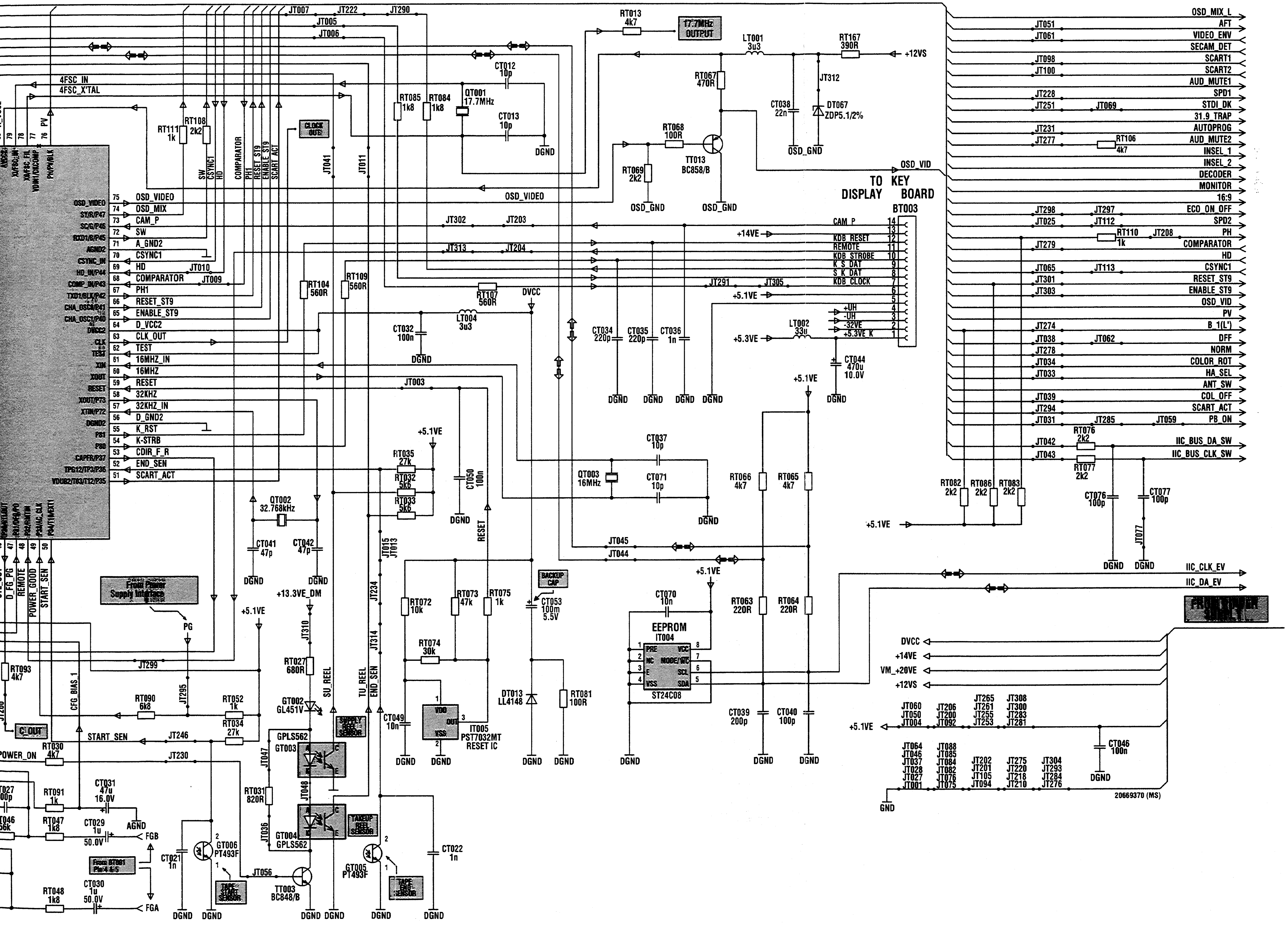
SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TO AC HEAD
P_R_CTL1
C_BIAS
+5.1VE
RT015 110k
RT014 110k
CT005 10n
CT006 10n
CT007 10n
RT001 220R
RT007 10k
DRUM-MOTOR DRIVER
IT003 TB6515AP
CT015 10n
CT014 10n
CT016 100n
MT001
TTN4 DRUM MOTOR
RT008 2R2
RT009 2R2
AGND
D_FG_PG
C_IN_REC_INH
CT008 100u 16.0V
CT011 100n
JT270
JT089
JT095
+13.3VE_DM
HALL ELEMENT
GT001 HW330B
CT001 100n
+5.1VE
JT224
JT049
RT017 200R
RT018 200R
RT012 10k
JT205
JT054
+12.6VE_LM
JT099
CT018 100n
ST001
DGND
IT002 TA7291S
RT019 10k
LOAD_OUT
JT240
+12.6VE_LM
TO RT027
LOADING MOTOR IC
RT020 10k
LOAD_IN
RT010 4k7
CT010 2n2
RT011 820R
CAM_C
CAM_B
CAM_A
JT018
CT020 100n
JT268
RT004 12k
JT097
CT002 10n
CT009 47u 16.0V
BT002
TO MECHADECK
CAM_C
CAM_B
CAM_A
GND
LO_IN
LO_OUT
RT023 4k7
RT024 4k7
RT025 4k7
+5.1VE
JT256
RT005 47k
RT006 47k
CT003 1n
CT004 1n
BT001
TO CAPSTAN MOTOR
+12.6VE_CM
MGND
AGND
JT254
FGB
FGA
CFG_BIAS_1
CDIR_F_R
LIMITER
REG
5.1VE
TO CT029 & CT030
JT273
JT030
CT060 100u 16.0V
+12.6VE_CM
MONITOR
CLIM_PWM
DECODER
C_BIAS
ECO_ON_OFF
16:9
INSEL_2
INSEL_1
AUD_MUTE2
P_R_CTL1
CM_PWM
AUTOPROG
31.9_TRAP
STDI_DK
AUD_MUTE1
SPD1
SCART2
SCART1
SECAM_DET
VIDEO_ENV
AFT
JT087
JT022
JT026
JT236
JT021
JT307
JT058
JT032
RT095 0R
RT096 10k
RT094 0R
JT091
DGND
RT105 4k7
JT023
JT024
JT019
JT017
D_VCC2
JT020
JT286
RT102 4k7
RT103 4k7
CT072 100n
IT091 TMP90PR74
D_GND
AFT
VIDEO_ENV
SECAM_DET
SCART1
SCART2
C_IN_REC_INH
SHOWVIEW
CAM_C
CAM_B
CAM_A
AD_GND
AD_REF
D_VCC1
SPD1
A_MUT
STDI_DK
31.9_TRAP
AUTOPROG
A_MUT2
S_1
S_2
16:9
ECO_ON_OFF
LOAD_IN
DM_PWM
CM_PWM
CLIM_PWM
K_S_DATA
S_K_DATA
K_CLK
PB_ON
HA_SEL
COLOR_ROT
SPD2
NORM
DFF
B_1(L')
IIC_BUS_CLK_EV
IIC_BUS_DA_EV
COL_OFF
IIC_BUS_CLK_SW
IIC_BUS_DA_SW
TU_REEL
SU_REEL
A_VCC2
PV
4FSC_IN
4FSC_X'TAL
RT111 1k
RT108 2k2
SW
CSYNC1
HD
COMPARATOR
OSD_VIDEO
OSD_MIX
CAM_P
SW
A_GND2
CSYNC1
HD
COMPARATOR
PH1
RESET_ST9
ENABLE_ST9
D_VCC2
CLK_OUT
TEST
16MHZ_IN
16MHZ
RESET
32KHZ
32KHZ_IN
D_GND2
K_RST
K-STRB
CDIR_F_R
END_SEN
SCART_ACT
JT010
JT009
DECOD
CAP_HIGH
MONI
POWER_ON
A_GND1
C_BIAS
PB_REC_CTL
C_BIAS
C_AMP0
C_AMP1
C_NFB
PDP
PDM
CFGA_AMP
CFGA_IN
CFGA_BIAS
CFGB_IN
CFGB_AMP
A_VCC1
CTL_OUT
D_FG_PG
REMOTE
POWER_GOOD
START_SEN
From Power Supply interface
PG
LOAD_OUT
DECODER
RT101 4k7
RT100 2k7
JT093
D_FG_PG
CFG_BIAS_1
CDIR_F_R
PB_REC_CTL
C_BIAS
JT315
JT235
JT014
JT029
JT012
JT096
JT299
VM_+20VE
JT245
TT005 2SA1020Y
RT036 330R
POWER_ON
To power supply
JT296
TT006 BC848/B
+5.1VE
RT002 10k
RT003 11k
RT037 180R
CT023 47u 16.0V
CT024 150p
RT042 680k
RT043 220k
RT041 470R
RT093 4k7
JT260
C_OUT
CFG_BIAS_1
JT295
RT090 6k8
START_SEN
JT246
POWER_ON
RT030 4k7
JT230
RT045 1M
CT026 470n
RT044 1M
CT025 470n
CT027 100p
RT091 1k
RT046 56k
RT047 1k8
CT028 100p
RT049 56k
RT048 1k8
CT031 47u 16.0V
CT029 1u 50.0V
CT030 1u 50.0V
FGB
FGA
From BT001 Pin 4 & 5
CT021 1n
GT006 PT493F
DGND

JT091: For models without showview feature.
RT095 & RT096 for models with showview feature.

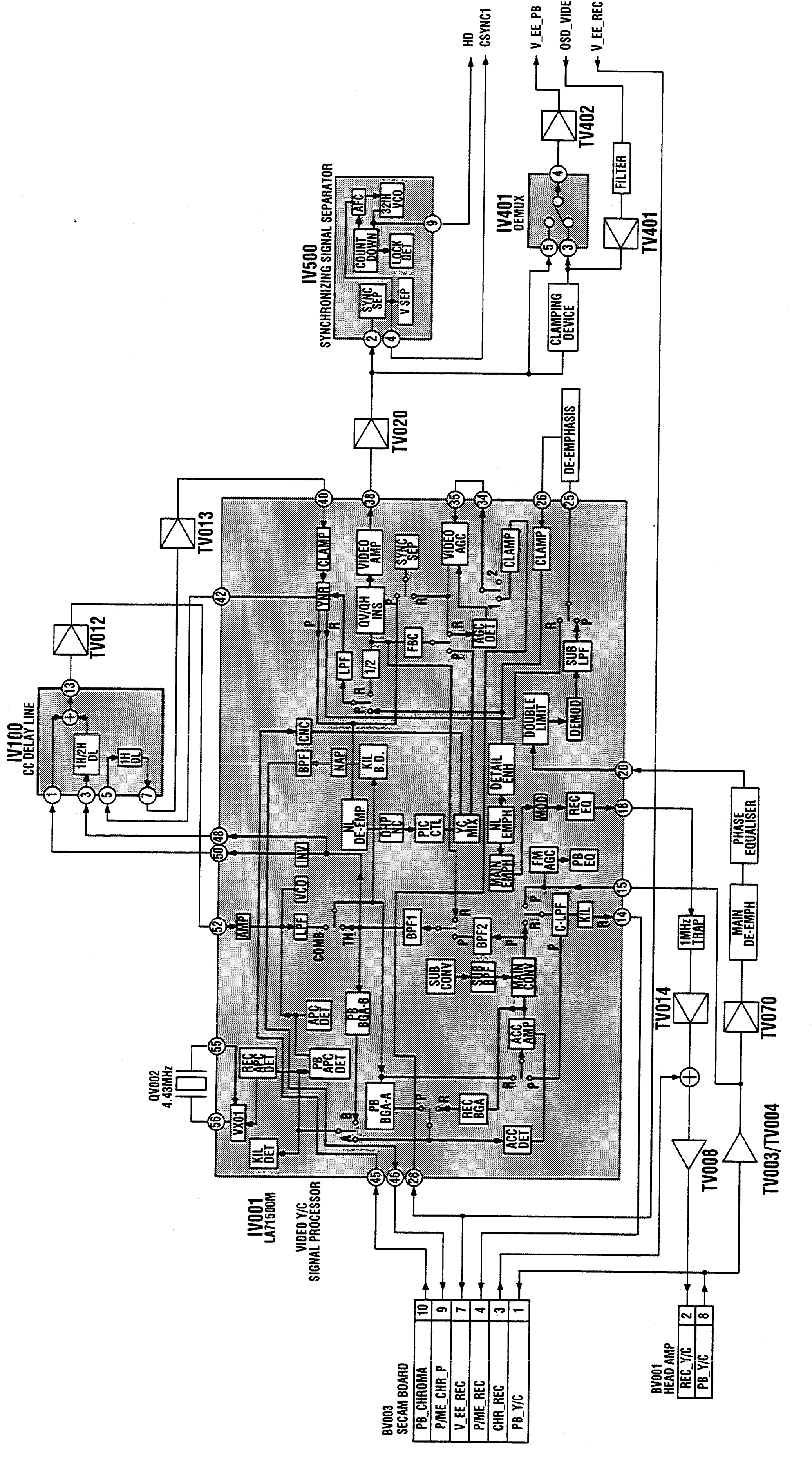
Note
AGND : Analog Ground.
DGND : Digital Ground.
MGND : Motor Ground.

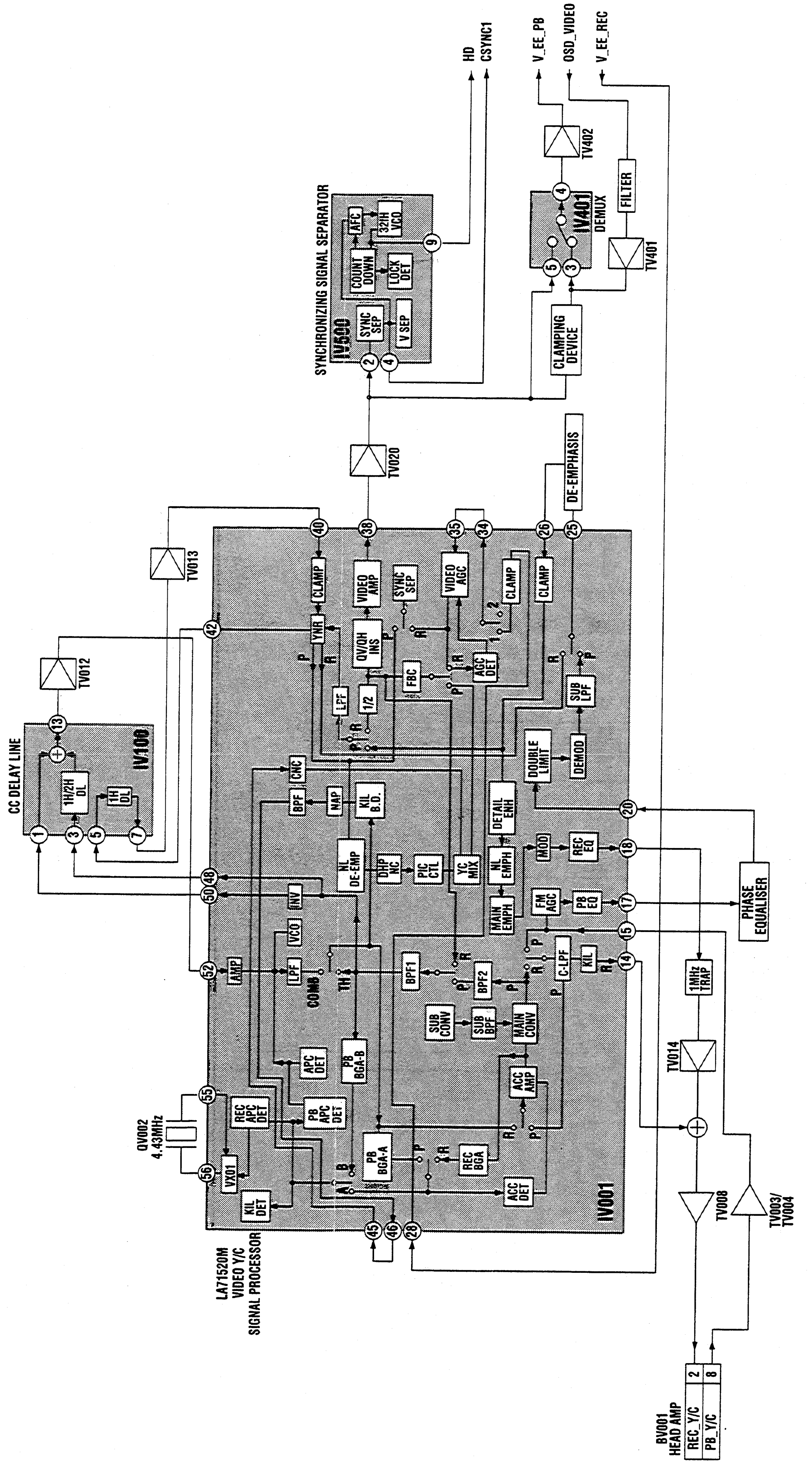
NICA / SERVO - SERVOMECANISMO / GESTIÒN


4FSC_IN
4FSC_X'TAL
RT111 1k
RT108 2k2
CLOCK OUT
JT007
JT222
JT290
JT005
JT006
CT012 10p
QT001 17.7MHz
RT085 1k8
RT084 1k8
CT013 10p
DGND
RT013 4k7
17.7MHz OUTPUT
LT001 3u3
RT167 390R
+12VS
RT067 470R
JT312
CT038 22n
DT067 ZDP5.1/2%
RT068 100R
TT013 BC858/B
RT069 2k2
OSD_GND
OSD_VID
TO KEY DISPLAY BOARD
BT003
OSD_VIDEO
OSD_MIX
CAM_P
SW
A_GND2
CSYNC1
HD
COMPARATOR
PH1
RESET_ST9
ENABLE_ST9
D_VCC2
CLK_OUT
TEST
16MHZ_IN
16MHZ
RESET
32KHZ
32KHZ_IN
D_GND2
K_RST
K-STRB
CDIR_F_R
END_SEN
SCART_ACT
JT010
JT009
JT302
JT203
JT313
JT204
RT104 560R
RT109 560R
RT107 560R
DVCC
LT004 3u3
CT032 100n
JT003
KDB_RESET
REMOTE
KDB_STROBE
K_S_DAT
S_K_DAT
KDB_CLOCK
+14VE
+5.1VE
+UH
-UH
-32VE
+5.3VE_K
JT291
JT305
LT002 33u
+5.3VE
CT034 220p
CT035 220p
CT036 1n
CT044 470u 10.0V
RT035 27k
RT032 5k6
RT033 5k6
CT050 100n
CT037 10p
QT003 16MHz
CT071 10p
RT066 4k7
RT065 4k7
QT002 32.768kHz
CT041 47p
CT042 47p
JT045
JT044
RT072 10k
RT073 47k
RT075 1k
RT074 30k
BACKUP CAP
CT053 100m 5.5V
CT070 10n
EEPROM
IT004
ST24C08
RT063 220R
RT064 220R
From Power Supply Interface
PG
+13.3VE_DM
JT310
RT027 680R
GT002 GL451V
SUPPLY REEL SENSOR
GPLS562
GT003
GT004
GPLS562
TAKEUP REEL SENSOR
IT005
PST7032MT
RESET IC
DT013 LL4148
RT081 100R
CT039 200p
CT040 100p
RT093 4k7
JT299
RT090 6k8
RT052 1k
RT034 27k
START_SEN
JT246
POWER_ON
RT030 4k7
JT230
RT091 1k
CT031 47u 16.0V
RT047 1k8
CT029 1u 50.0V
AGND
FGB
FGA
RT048 1k8
CT030 1u 50.0V
From BT001 Pin4 & 5
CT021 1n
GT006 PT493F
TAPE START SENSOR
JT056
TT003 BC848/B
GT005 PT493F
TAPE END SENSOR
CT022 1n
OSD_MIX_L
AFT
VIDEO_ENV
SECAM_DET
SCART1
SCART2
AUD_MUTE1
SPD1
STDI_DK
31.9_TRAP
AUTOPROG
AUD_MUTE2
INSEL_1
INSEL_2
DECODER
MONITOR
16:9
ECO_ON_OFF
SPD2
PH
HD
CSYNC1
RESET_ST9
ENABLE_ST9
OSD_VID
PV
B_1(L')
DFF
NORM
COLOR_ROT
HA_SEL
ANT_SW
COL_OFF
SCART_ACT
PB_ON
IIC_BUS_DA_SW
IIC_BUS_CLK_SW
RT076 2k2
RT077 2k2
RT082 2k2
RT086 2k2
RT083 2k2
CT076 100p
CT077 100p
IIC_CLK_EV
IIC_DA_EV
DVCC
+14VE
VM_+20VE
+12VS
CT046 100n
GND
20669370 (MS)

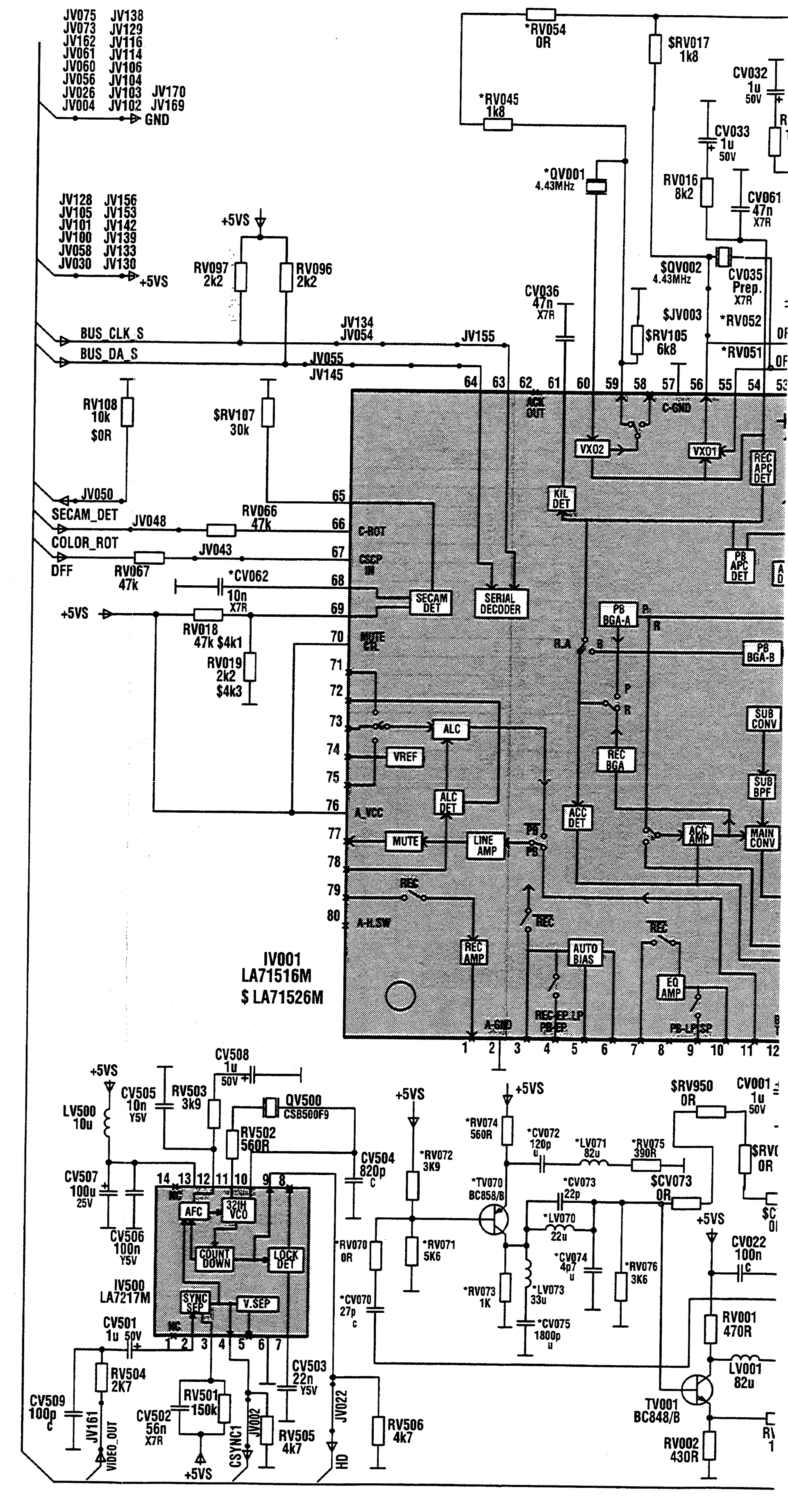
VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


HD
CSYNC1
V_EE_PB
OSD_VIDEO
V_EE_REC
IV500
SYNCHRONIZING SIGNAL SEPARATOR
AFC
32H VCO
COUNT DOWN
LOCK DET
SYNC SEP
V SEP
TV402
IV401
DEMUX
FILTER
TV401
CLAMPING DEVICE
TV020
DE-EMPHASIS
TV013
TV012
IV100
CC DELAY LINE
1H/2H DL
1H DL
PHASE EQUALISER
MAIN DE-EMPH
1MHz TRAP
TV014
TV070
TV008
TV003/TV004
QV002
4.43MHz
IV001
LA71500M
VIDEO Y/C SIGNAL PROCESSOR
BV003
SECAM BOARD
PB_CHROMA
P/ME_CHR_P
V_EE_REC
P/ME_REC
CHR_REC
PB_Y/C
BV001
HEAD AMP
REC_Y/C
PB_Y/C

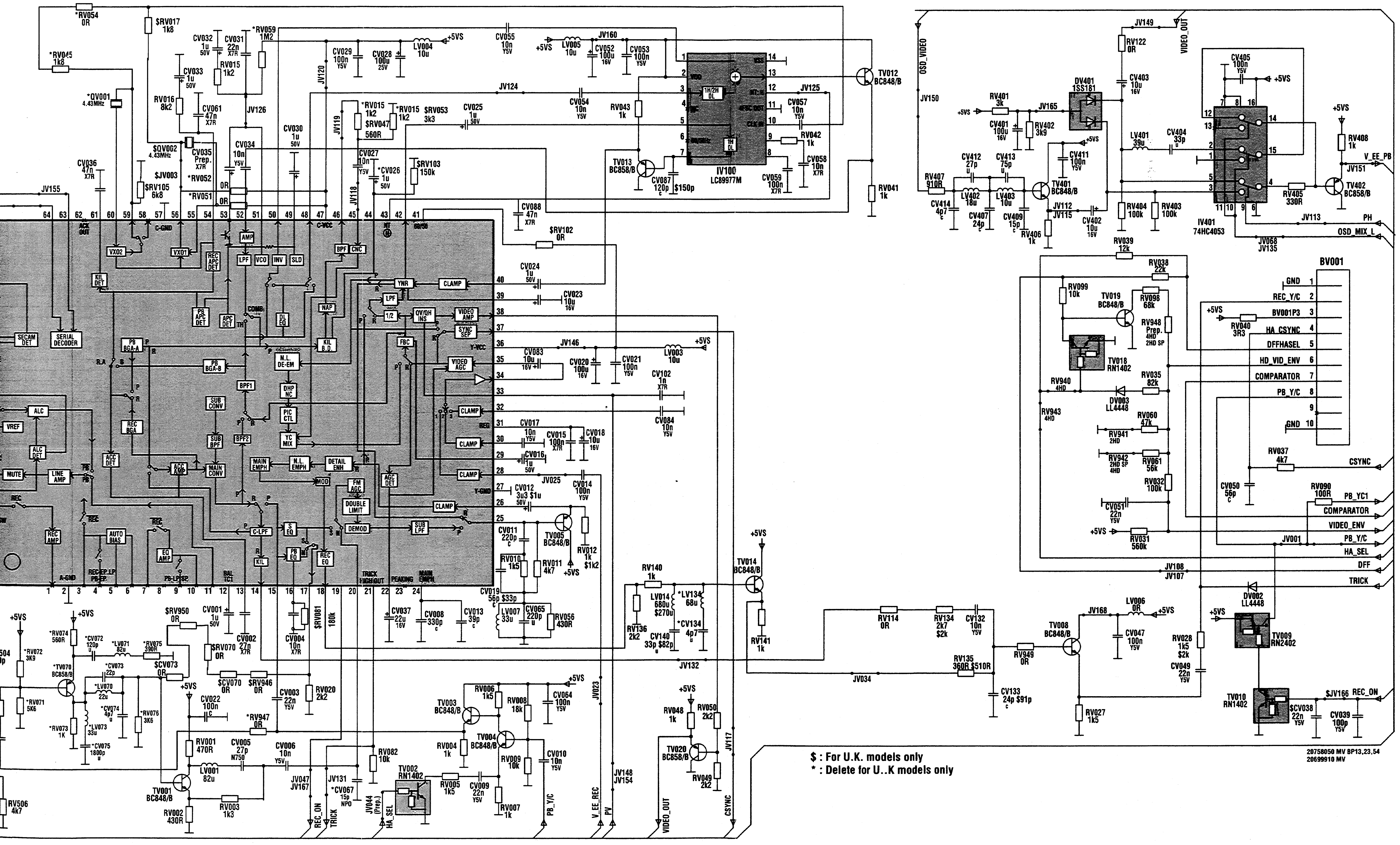

HD
CSYNC1
V_EE_PB
OSD_VIDEO
V_EE_REC
SYNCHRONIZING SIGNAL SEPARATOR
IV500
TV402
IV401
DEMUX
FILTER
TV401
CLAMPING DEVICE
TV020
DE-EMPHASIS
TV013
TV012
IV100
CC DELAY LINE
PHASE EQUALISER
1MHz TRAP
TV014
TV008
TV003/TV004
QV002
4.43MHz
IV001
LA71520M
VIDEO Y/C SIGNAL PROCESSOR
BV001
HEAD AMP
REC_Y/C
PB_Y/C

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIP


GND
+5VS
BUS_CLK_S
BUS_DA_S
SECAM_DET
COLOR_ROT
DFF
IV001
LA71516M
$ LA71526M
IV500
LA7217M
QV500
CSB500F9
TV001
BC848/B
TV070
BC858/B
VIDEO_OUT
CSYNC1
HD

ENTO VIDEO

DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


IV100
LC89977M
IV401
74HC4053
BV001
GND
REC_Y/C
BV001P3
HA_SYNC
DFFHASEL
HD_VID_ENV
COMPARATOR
PB_Y/C
OSD_VIDEO
VIDEO_OUT
V_EE_PB
PH
OSD_MIX_L
CSYNC
PB_YC1
VIDEO_ENV
HA_SEL
DFF
TRICK
REC_ON
V_EE_REC
PV
PB_Y/C
TV001 BC848/B
TV003 BC848/B
TV004 BC848/B
TV005 BC848/B
TV008 BC848/B
TV009 RN2402
TV010 RN1402
TV012 BC848/B
TV013 BC858/B
TV014 BC848/B
TV018 RN1402
TV019 BC848/B
TV020 BC858/B
TV401 BC848/B
TV402 BC858/B
TV002 RN1402
DV401 1SS181
DV002 LL4448
DV003 LL4448
*QV001 4.43MHz
$QV002 4.43MHz
+5VS

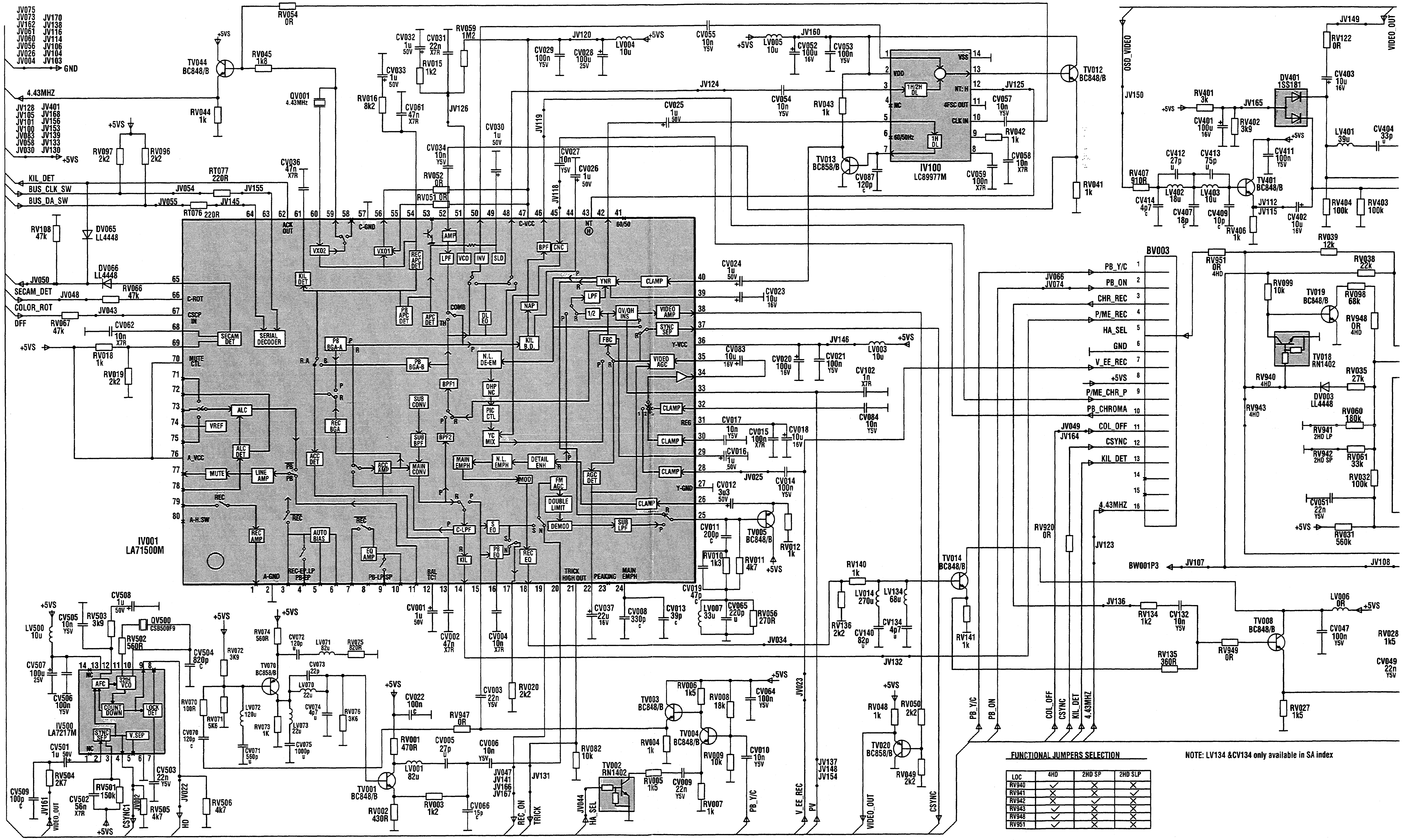
$: For U.K. models only

* : Delete for U..K models only

20758050 MV BP13,23,54
20699910 MV

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

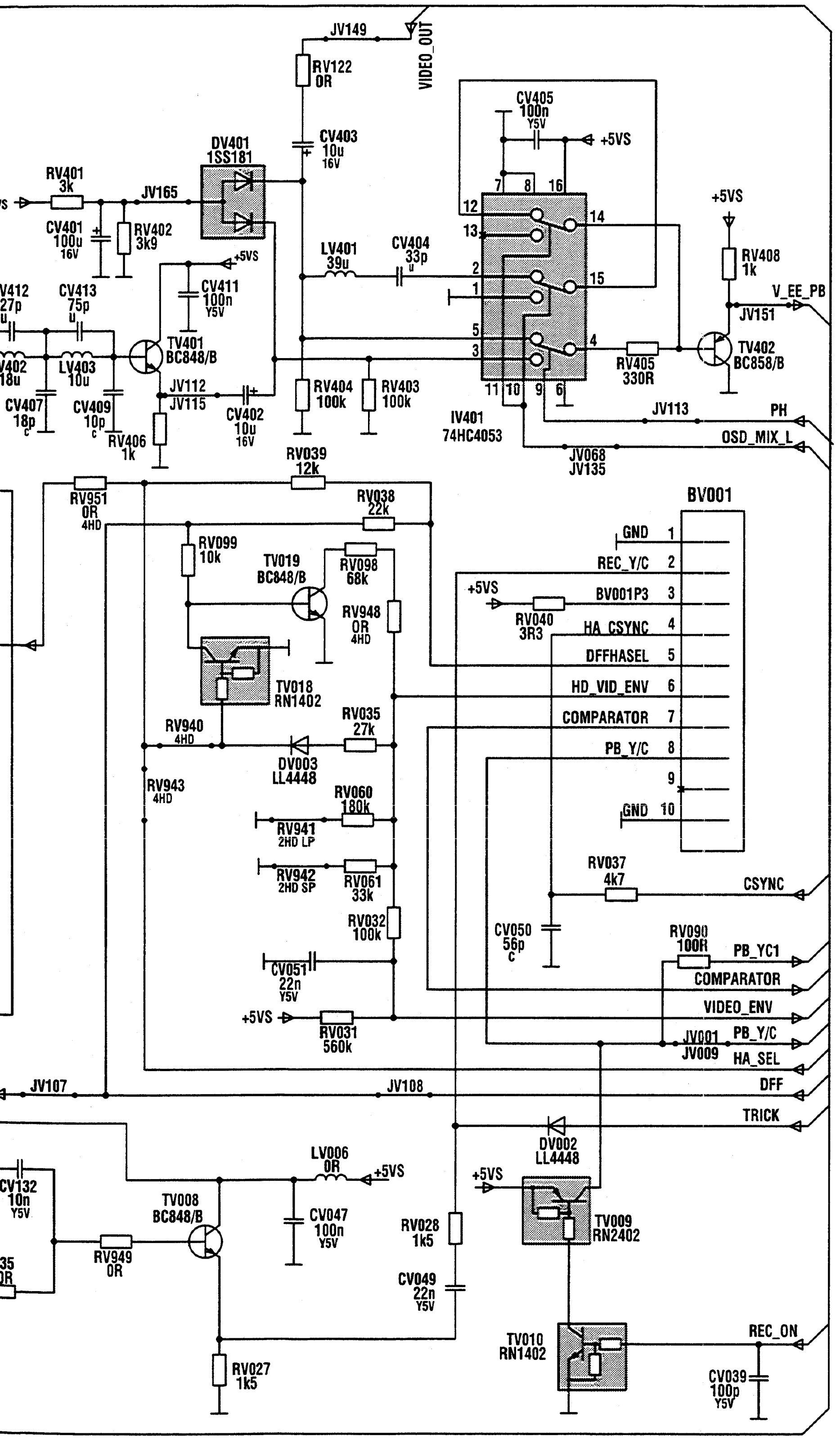

IV001
LA71500M
IV100
LC89977M
IV500
LA7217M
BV003
PB_Y/C
PB_ON
CHR_REC
P/ME_REC
HA_SEL
GND
V_EE_REC
+5VS
P/ME_CHR_P
PB_CHROMA
COL_OFF
CSYNC
KIL_DET
4.43MHZ
BW001P3
VIDEO_OUT
OSD_VIDEO
GND
4.43MHZ
KIL_DET
BUS_CLK_SW
BUS_DA_SW
SECAM_DET
COLOR_ROT
DFF
TV044 BC848/B
TV012 BC848/B
TV013 BC858/B
TV401 BC848/B
TV019 BC848/B
TV018 RN1402
TV005 BC848/B
TV014 BC848/B
TV008 BC848/B
TV003 BC848/B
TV004 BC848/B
TV020 BC858/B
TV002 RN1402
TV001 BC848/B
TV070 BC858/B
QV001 4.43MHz
QV500 CSB500F9
DV401 1SS181
DV065 LL4448
DV066 LL4448
DV003 LL4448
REC_ON
TRICK
HA_SEL
HD
CSYNC1
PB_Y/C
V_EE_REC
PV
VIDEO_OUT
CSYNC

FUNCTIONAL JUMPERS SELECTION

LOC	4HD	2HD SP	2HD SLP
RV940	✓	✗	✗
RV941	✗	✗	✓
RV942	✗	✓	✗
RV943	✓	✗	✗
RV948	✓	✗	✗
RV951	✓	✗	✗

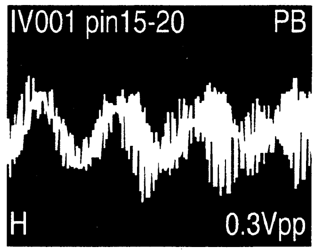
NOTE: LV134 &CV134 only available in SA index

ATAMIENTO VIDEO


JV149
VIDEO_OUT
RV122
0R
CV403
10u
16V
DV401
1SS181
RV401
3k
JV165
CV401
100u
16V
RV402
3k9
+5VS
CV411
100n
Y5V
V412
27p
CV413
75p
TV401
BC848/B
V402
18u
LV403
10u
CV407
18p
CV409
10p
RV406
1k
JV112
JV115
CV402
10u
16V
LV401
39u
CV404
33p
RV404
100k
RV403
100k
CV405
100n
Y5V
+5VS
IV401
74HC4053
RV405
330R
RV408
1k
V_EE_PB
JV151
TV402
BC858/B
JV113
PH
OSD_MIX_L
JV068
JV135
RV039
12k
RV951
0R
4HD
RV038
22k
RV099
10k
TV019
BC848/B
RV098
68k
RV948
0R
4HD
TV018
RN1402
RV940
4HD
RV035
27k
DV003
LL4448
RV943
4HD
RV060
180k
RV941
2HD LP
RV942
2HD SP
RV061
33k
RV032
100k
CV051
22n
Y5V
+5VS
RV031
560k
BV001
GND 1
REC_Y/C 2
BV001P3 3
HA_CSYNC 4
DFFHASEL 5
HD_VID_ENV 6
COMPARATOR 7
PB_Y/C 8
9
GND 10
RV040
3R3
RV037
4k7
CSYNC
CV050
56p
RV090
100R
PB_YC1
COMPARATOR
VIDEO_ENV
JV001
JV009
PB_Y/C
HA_SEL
JV107
JV108
DFF
TRICK
DV002
LL4448
LV006
0R
CV132
10n
Y5V
TV008
BC848/B
RV949
0R
CV047
100n
Y5V
RV028
1k5
CV049
22n
Y5V
TV009
RN2402
TV010
RN1402
REC_ON
CV039
100p
Y5V
RV027
1k5

NOTE: LV134 &CV134 only available in SA index

20699900 (VIDEO)



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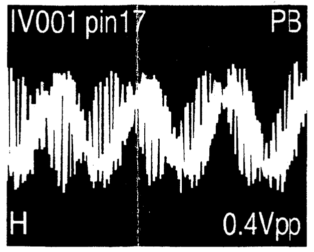

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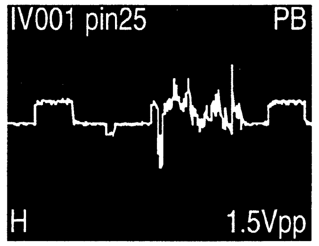
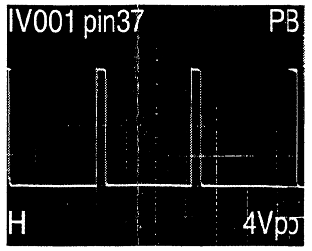


③



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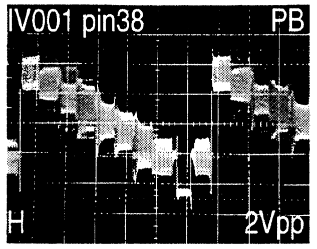

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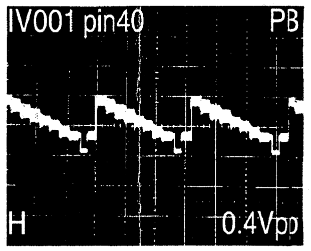
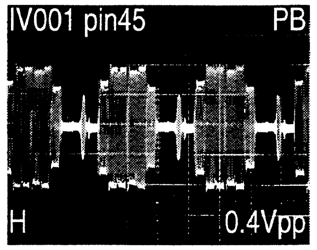
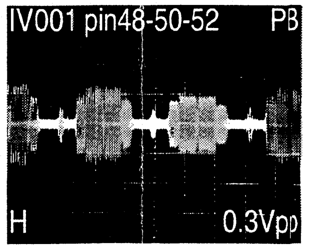


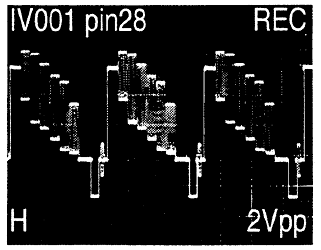
⑥



⑦



⑧



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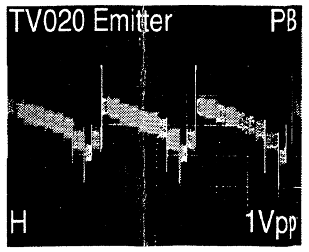


⑩

MEASUREMENTS VIDEO SIGNAL PROCESSING - MESURES TRAITEMENT VIDEO - MESSUNGEN VIDEO SIGNALVERARBEITUNG - MISURE ELABORAZIONE VIDEO - MEDIDAS TRATAMIENTO VIDEO

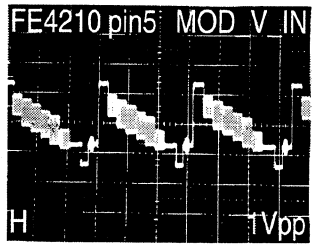
VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
DV401	1	2.8	2.8	2.7
	2	2.5	2.5	2.5
	3	2.8	2.6	2.8
IV001	1	NC	NC	NC
	2	0	0	0
	3	NC	NC	NC
	4	NC	NC	NC
	5	NC	NC	NC
	6	NC	NC	NC
	7	NC	NC	NC
	8	NC	NC	NC
	9	NC	NC	NC
	10	NC	NC	NC
	11	NC	NC	NC
	12	2.3	2.3	2.3
	13	2.1	1.9	2.1
	14	2.7	0	2.7
	15	0.3	3.2	0
	16	2.7	2.8	2.7
	17	2.7	1.4	2.7
	18	2.2	1.6	2.1
	19	0	0	4.1
	20	3.1	3.1	3.1
	21	0	4.1	0
	22	1.6	1.9	1.6
	23	0	1.6	0
	24	2.5	1.9	2.5
	25	2.2	2.2	2.2
	26	3.1	3.1	3.1
	27	0	0	0
	28	2.3	0.3	2.3
	29	2.2	2.2	2.3
	30	1.8	0.3	1.8
	31	4.1	4.1	4.1
	32	1.8	0.3	1.8
	33	0	0.2	0.2
	34	2.3	2.1	2.3
	35	3.1	3.1	3.1
	36	5	4.9	5
	37	0.6	0.6	0.6
	38	1.9	1.8	1.9
	39	3.3	3.3	3.2
	40	3.1	3	3.1
	41	NC	NC	NC
	42	2	1.9	2
	43	0.4	0.4	0.4
	44	1.8	1.8	1.8
	45	1.9	1.9	1.9
	46	0	2.6	0
	47	5	5	5
	48	2.8	2.8	2.8
	49	4.2	4.2	4.2
	50	2.9	2.8	2.8
	51	4.2	4.2	4.2
	52	3.2	3.2	3.2
	53	0.6	0.5	0.5
	54	2.2	2.2	2.2
	55	5	5	5
	56	5	5	5
	57	0	0	0
	58	NC	NC	NC
	59	2.3	2.3	2.3
	60	3.9	3.9	3.9
	61	1.9	1.9	1.9
	62	0	0	0
	63	4.8	4.8	4.8
	64	4.8	4.8	4.8
	65	0.3	0.3	0.3
	66	0.3	0.3	0.3
	67	0	0	0
	68	0.8	0.8	0.8
	69	3.5	3.4	3.4
	70	5	5	5
	71	NC	NC	NC
	72	NC	NC	NC
	73	NC	NC	NC
	74	NC	NC	NC
	75	NC	NC	NC
	76	5	5	5
	77	NC	NC	NC
	78	NC	NC	NC
	79	NC	NC	NC
	80	NC	NC	NC
IV100	1	2.5	2.5	2.5
	2	5	5	5
	3	2.5	2.5	2.5
	4	NC	NC	NC
	5	2.3	2.3	2.3
	6	NC	NC	NC
	7	1.5	1.5	1.5
	8	8.9	8.9	8.9
	9	2.2	2.2	2.2
	10	0.9	0.9	0.9
	11	0	0	0
	12	0.4	0.4	0.4
	13	1.9	1.9	1.9
	14	0	0	0
IV401	1	0	0	0
	2	0.4	0.4	0.4
	3	2.5	2.5	2.5
	4	2.8	2.7	2.8
	5	2.8	3.1	2.8
	6	0	0	0
	7	0	0	0
	8	0	0	0
	9	0	0	0
	10	5.1	5.1	5.1
	11	5.1	5.1	5.1
	12	0	0	0
	13	NC	NC	NC
	14	2.8	2.6	2.8
	15	0	0	0
	16	5	5	5
IV500	1	NC	NC	NC
	2	2.4	2.4	2.4
	3	3.3	3.4	3.3
	4	3.8	3.8	3.8
	5	NC	NC	NC
	6	0	0	0
	7	4.9	4.9	4.9
	8	NC	NC	NC
	9	3.9	3.9	3.8
	10	4	4	4
	11	2.7	2.7	2.7
	12	2.2	2.2	2.2
	13	5	5	5
	14	NC	NC	NC
TV001	E	1.2	1.2	1.2
	B	1.9	1.9	1.9
	C	3.7	3.7	3.7
TV002	E	0	0	0
	B	0	0	0
	C	0.3	0.3	0.3
TV003	E	2.7	2.6	2.6
	B	3.3	3.3	3.3
	C	5	5	5
TV004	E	1.1	1.1	1.1
	B	1.8	1.8	1.8
	C	3.3	3.3	3.3
TV005	E	1.5	1.5	1.5
	B	2.1	2.1	2.1
	C	5	5	5
TV008	E	0.9	0.4	0.9
	B	1.5	1	1.5
	C	5	5	5
TV009	E	5	5	5
	B	5	5	0
	C	1.9	1.8	5
TV010	E	0	0	0
	B	0	0	4.1
	C	5	5	0
TV012	E	1.3	1.3	1.3
	B	1.9	1.9	1.9
	C	5	5	5
TV013	E	2.1	2.1	2.1
	B	1.5	1.5	1.5
	C	0	0	0
TV014	E	1.5	1	1.5
	B	2.1	1.6	2.1
	C	5	5	5
TV020	E	1.6	1.5	1.6
	B	1	1	1
	C	0	0	0
TV044	E	1.6	1.6	1.6
	B	2.3	2.2	2.2
	C	5	5	5
TV070	E	3.6	3.6	3.6
	B	3	2.9	2.9
	C	1.9	1.9	1.9
TV401	E	1.4	1.4	1.4
	B	2	2	2
	C	5	5	5
TV402	E	3.4	3.3	3.4
	B	2.8	2.6	2.8
	C	0	0	0

MEASUREMENTS POWER SUPPLY INTERFACE / TUNER / IF SECTION - MESURES INTERFACE ALIMENTATION / TUNER / FI - MESSUNGEN NETZEIL INTERFACE / TUNER / ZF - MISURE INTERFACCIA ALIMENTAZIONE / TUNER / IF - MEDIDAS INTERFAZ ALIMENTACIÒN / TUNER / IF

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
FE4210	1	0	0	0
	2	5.1	5.1	5.1
	3	4.3	4.3	4.3
	4	12	12	12
	5	3.1	2.7	3.1
	6	0	0	0
	7	12.1	12.1	12.1
	8	5.2	5.2	5.1
	9	31.3	32	32.4
	10	5.2	5.2	5.2
	11	5.2	5.2	5.2
	12	0	0	0
	13	1.8	1.8	1.8
II050	1	3.3	3.3	3.3
	2	3.3	3.3	3.3
	3	5	5	5
	4	2.8	2.8	2.8
	5	2.7	2.7	2.7
	6	2.7	2.7	2.7
	7	3.5	3.5	3.5
	8	2.3	2.3	2.4
	9	2.3	2.3	2.3
	10	2.3	2.3	2.3
	11	2.1	2.1	2.1
	12	1.9	1.9	1.9
	13	2.4	2.4	2.7
	14	4.3	4.3	4.3
	15	0.9	0.9	0.9
	16	2.1	2.1	2.1
	17	2.1	2.1	2.1
	18	2.7	2.7	2.7
	19	2.7	2.7	2.7
	20	0	0	0
	21	4.9	4.9	4.9
	22	1.2	1.2	1.2
	23	3.3	3.3	3.3
	24	3.3	3.3	3.3
IS001	1	12	12	12
	2	0	0	0
	3	0	0	0
	4	4.1	4.1	4.1
	5	4.2	4.2	4.1
	6	4.2	4.2	4.1
	7	0	0	0
	8	4.2	4.2	4.1
	9	4.2	4.2	4.1
	10	4.2	4.2	4.1
	11	0.5	0	0.5
	12	0	0	0
	13	4.2	4.2	4.1
	14	4.1	4.2	4.1
	15	4.2	4.2	4.1
	16	0.9	0.9	0.9
	17	4.2	4.2	4.2
	18	0.6	3.5	1.9
	19	12	12	12
	20	12	12	12
	21	0	0	0
	22	0	0	0
	23	4.6	0	4.6
	24	0	0	4.1

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
TI010	E	0.7	0.7	0.6
	B	0	0	0
	C	0	0	0
TI020	E	0.3	0.3	0.3
	B	1.1	1.1	1.1
	C	4.9	4.9	4.9
TI040	E	0	0	0
	B	2.3	2.3	2.3
	C	0	0	0
TI045	E	0	0	0
	B	0.2	0.1	0
	C	2.3	2.3	2.3
TI050	E	0	0	0
	B	0.1	0.1	0.1
	C	3.5	3.5	3.5
TI055	E	0	1.3	0
	B	0	2	0
	C	4.9	4.9	4.6
TI060	E	0	0	0
	B	0	0	0
	C	4.6	4.6	4.6
TS004	E	0	0	0
	B	0	4.9	0
	C	4.6	0	4.6
TS030	E	12	12	3.5
	B	12	12	3.4
	C	12	12	11.4
TP071	E	5.4	5.4	5.4
	B	4.7	4.7	4.7
	C	1.4	1.4	1.4
TP082	E	5.4	5.4	5.4
	B	7.2	7.2	7.2
	C	0	0	0
TP086	E	0	0	0
	B	0	0	0
	C	5.3	5.3	5.3
TP095	E	19.3	19.3	19.3
	B	19.3	19.3	19.3
	C	5.4	5.4	5.4
TP096	E	0	0	0
	B	0	0	0
	C	19.3	19.3	19.3
TW001	E	0	0	0
	B	0.6	0.6	0.6
	C	0	0	0
TW002	E	33.8	34.9	34.9
	B	0	0	0
	C	33.8	34.9	34.9

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
TW003	E	12.1	12.1	12.1
	B	12.8	12.8	12.8
	C	13.3	13.1	13.1
TW004	E	0	0	0
	B	0.8	0.8	0.8
	C	0	0	0
TW005	E	5.3	5.3	5.3
	B	4.5	4.5	4.5
	C	5.2	5.2	5.2
TW006	E	5.1	5.1	5.1
	B	5.8	5.8	5.8
	C	5.2	5.2	5.2
TW083	E	5.1	5.1	5.1
	B	5.9	5.9	5.9
	C	5.2	5.2	5.2
TZ001	E	0	0	0
	B	0	0	0
	C	4.9	4.9	4.9
TZ010	E	0	0	0.6
	B	0	3.7	0
	C	2.7	0	0
TZ019	E	1.3	0	0
	B	2	0	0
	C	4.9	4.9	4.6
TZ020	E	0	0	0
	B	5	5	5
	C	0	0	0
TZ031	E	2.3	2.2	2.4
	B	3.1	2.8	3
	C	9.7	9.8	9.7
TZ032	E	3.1	3.2	3.1
	B	2.5	2.3	2.4
	C	0	0	0
TZ057	E	3	3	3
	B	2.4	2.3	2.4
	C	0	0	0



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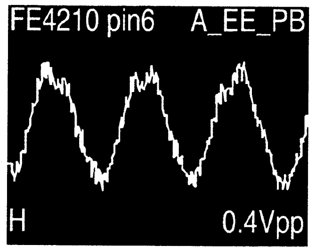

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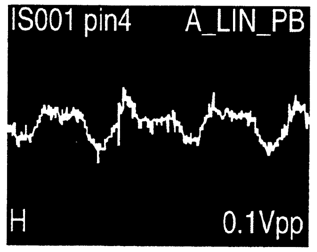

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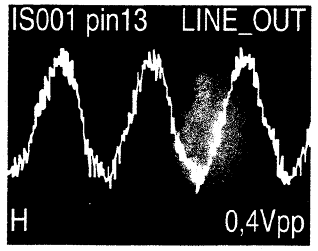
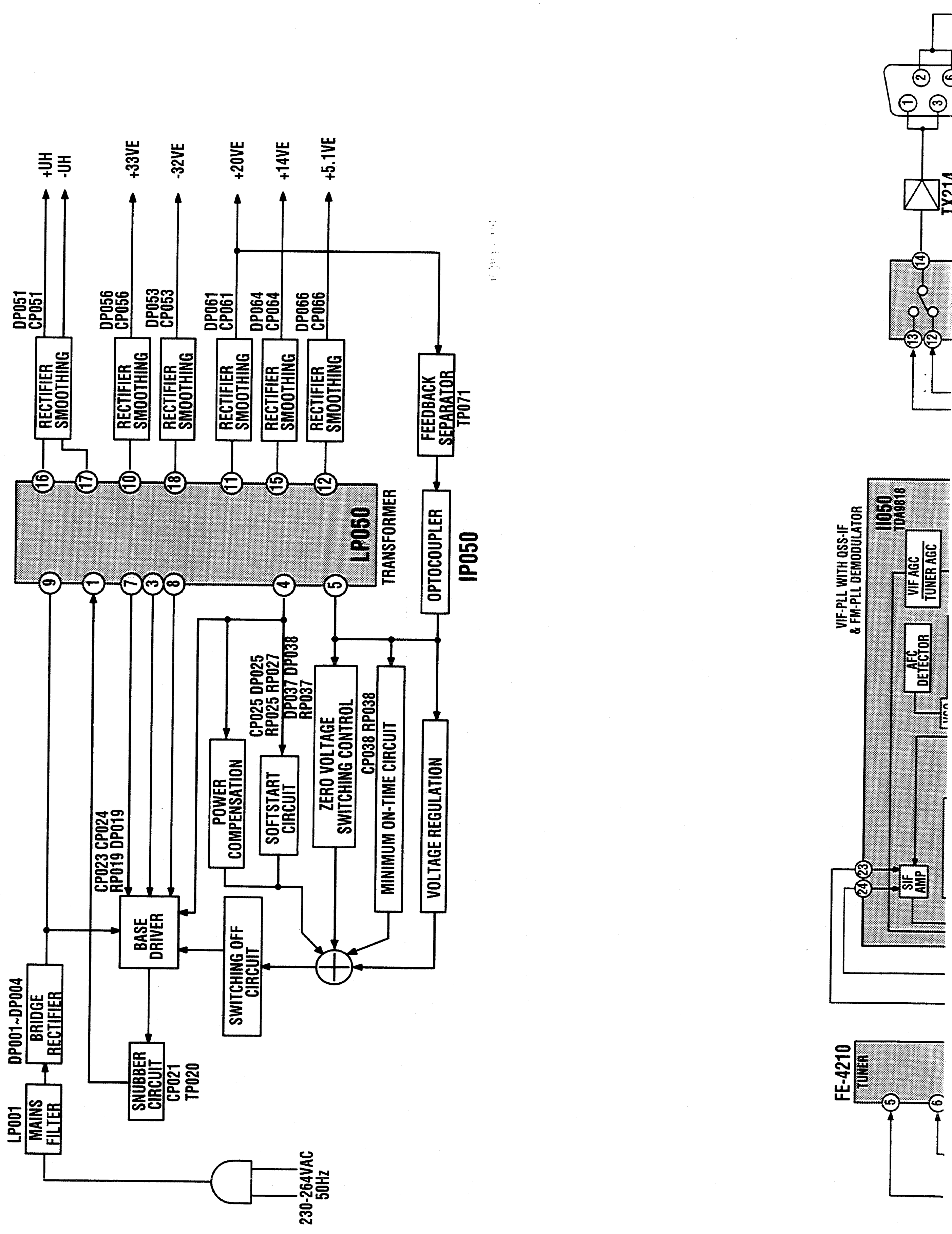


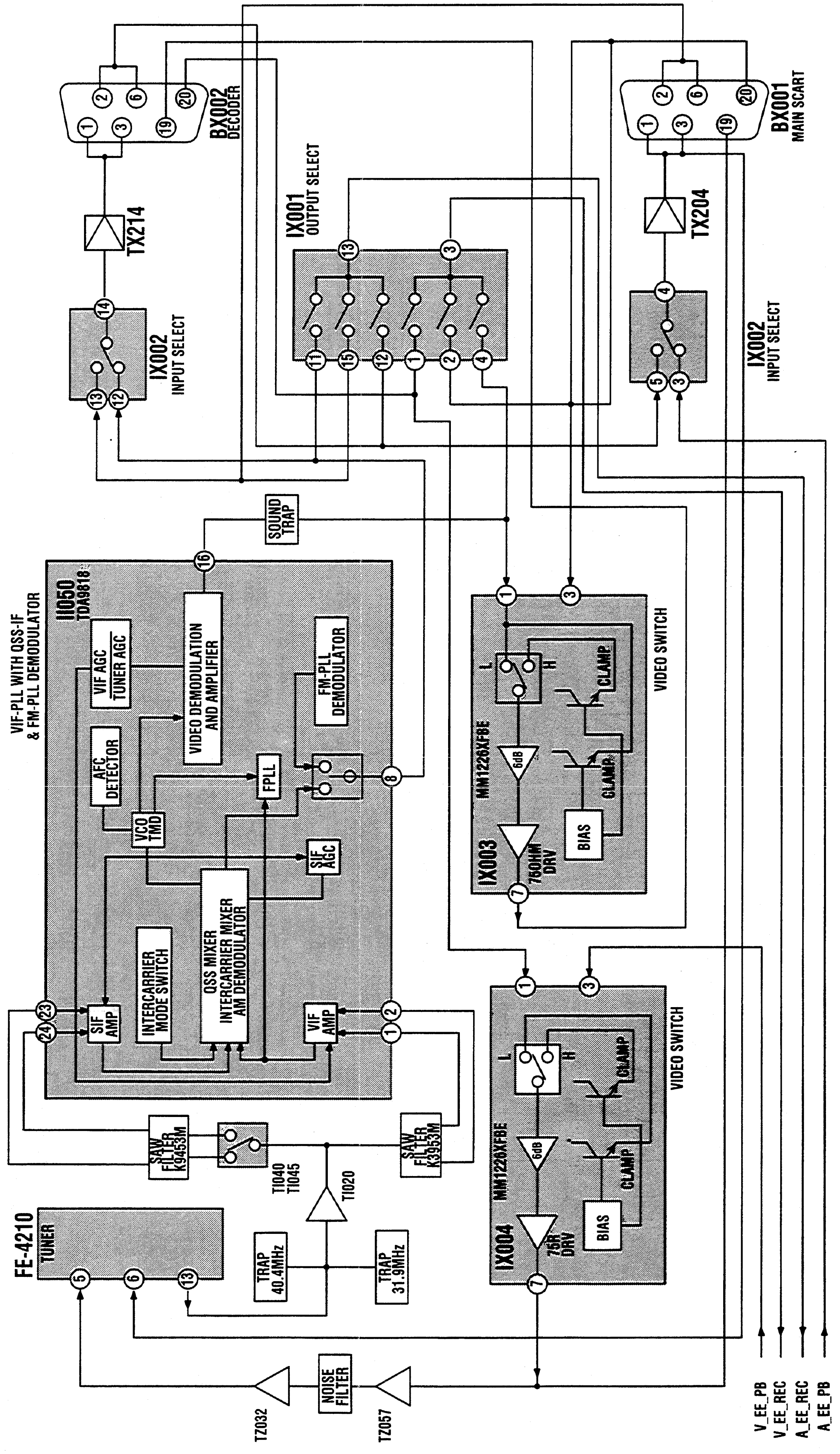
④

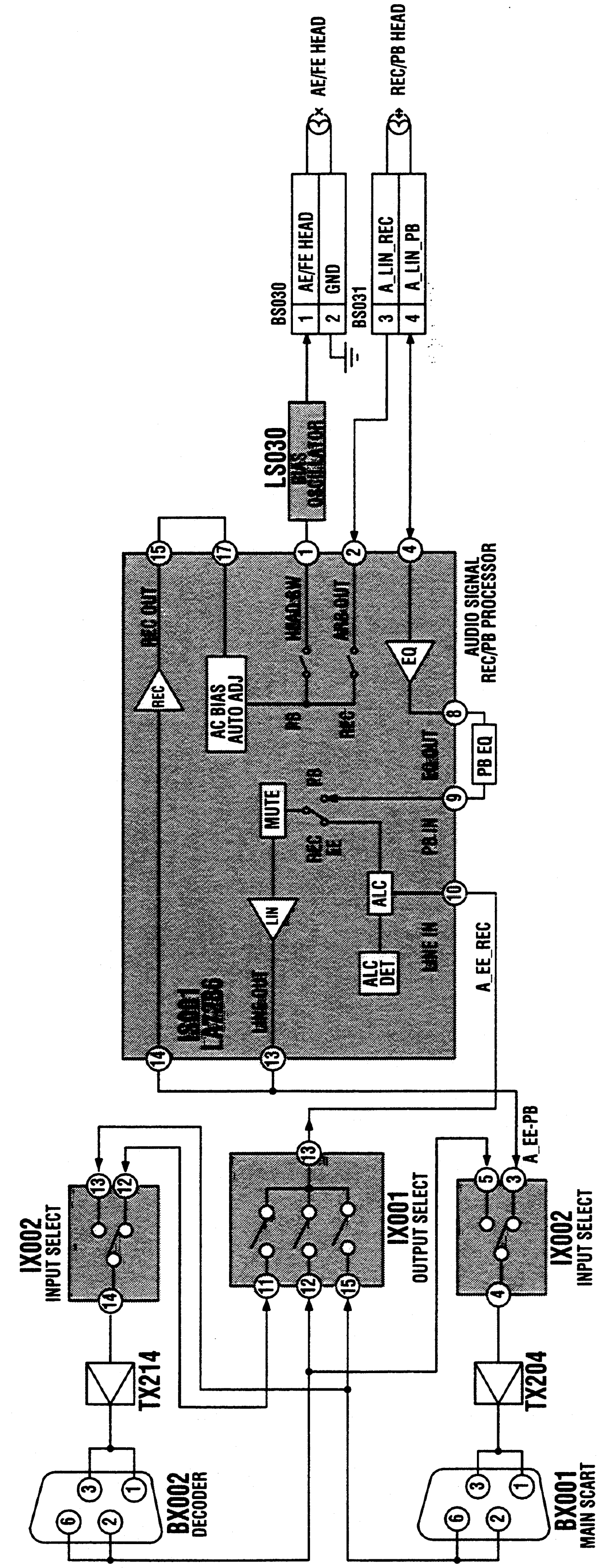
POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNE

BLOCK DIAGRAM - SCHEMA SY


+UH
-UH
+33VE
-32VE
+20VE
+14VE
+5.1VE
DP051 CP051
DP056 CP056
DP053 CP053
DP061 CP061
DP064 CP064
DP066 CP066
RECTIFIER SMOOTHING
RECTIFIER SMOOTHING
RECTIFIER SMOOTHING
RECTIFIER SMOOTHING
RECTIFIER SMOOTHING
RECTIFIER SMOOTHING
FEEDBACK SEPARATOR TP071
16
17
10
18
11
15
12
LP050
TRANSFORMER
OPTOCOUPLER
IP050
9
1
7
3
8
4
5
CP025 DP025 RP025 RP027
DP037 DP038 RP037
CP038 RP038
POWER COMPENSATION
SOFTSTART CIRCUIT
ZERO VOLTAGE SWITCHING CONTROL
MINIMUM ON-TIME CIRCUIT
VOLTAGE REGULATION
CP023 CP024 RP019 DP019
BASE DRIVER
SWITCHING OFF CIRCUIT
DP001~DP004 BRIDGE RECTIFIER
LP001 MAINS FILTER
SNUBBER CIRCUIT CP021 TP020
230-264VAC 50Hz
1
2
3
6
TX214
14
13
12
VIF-PLL WITH QSS-IF & FM-PLL DEMODULATOR
II050 TDA9818
VIF AGC TUNER AGC
AFC DETECTOR
SIF AMP
23
24
FE-4210 TUNER
5
6

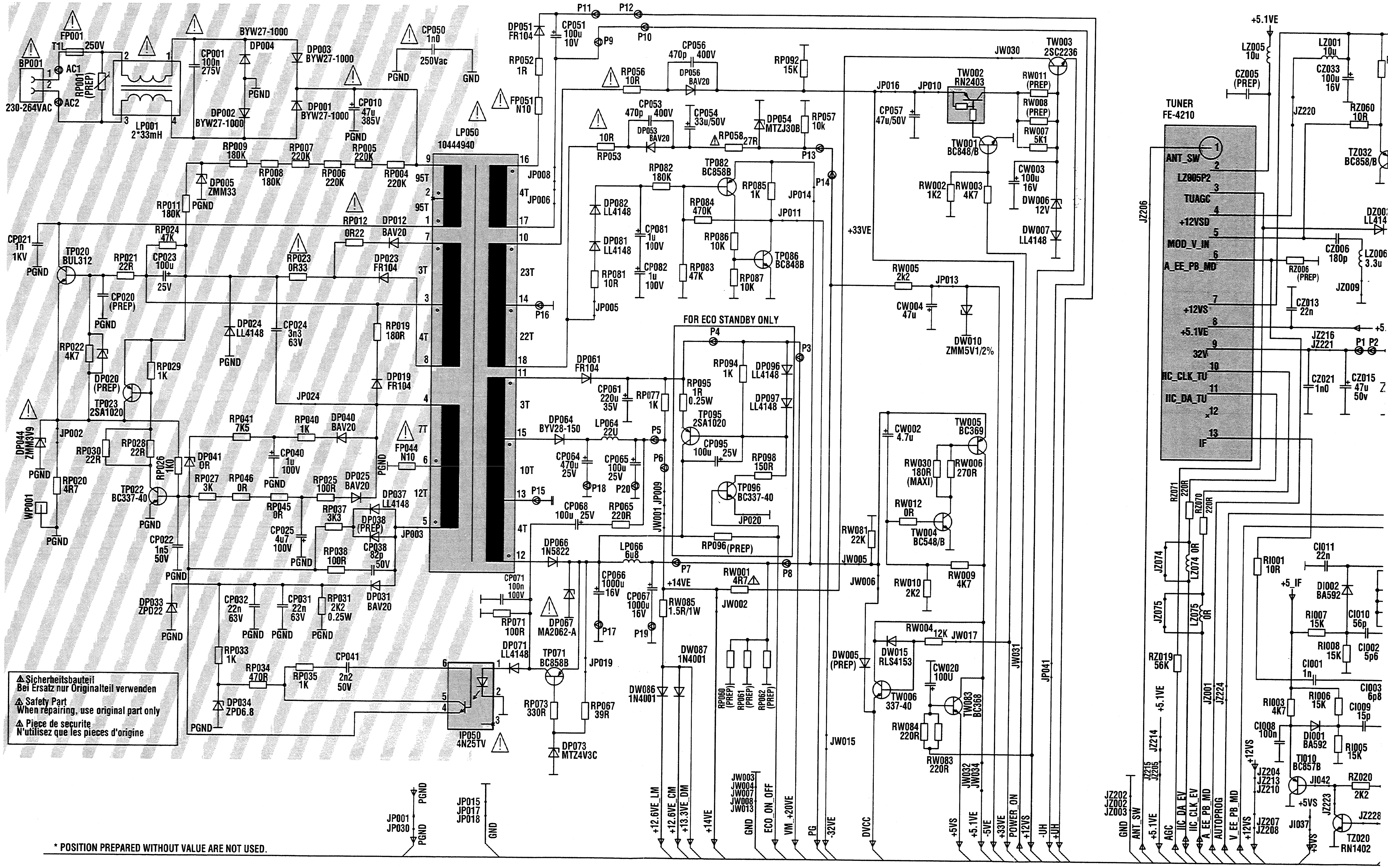
BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


BX002 DECODER
BX001 MAIN SCART
TX214
TX204
IX001 OUTPUT SELECT
IX002 INPUT SELECT
IX002 INPUT SELECT
SOUND TRAP
I1050 TDA9818
VIF-PLL WITH QSS-IF & FM-PLL DEMODULATOR
VIF AGC TUNER AGC
VIDEO DEMODULATION AND AMPLIFIER
FM-PLL DEMODULATOR
AFC DETECTOR
VCO TWD
FPLL
SIF AGC
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
INTERCARRIER MODE SWITCH
SIF AMP
VIF AMP
SAW FILTER K9453M
TI040 TI045
TI020
SAW FILTER K3953M
FE-4210 TUNER
TRAP 40.4MHz
TRAP 31.9MHz
TZ032
NOISE FILTER
TZ057
IX003
MM1228XFBE
6dB
75OHM DRV
BIAS
CLAMP
CLAMP
VIDEO SWITCH
IX004
MM1228XFBE
6dB
75R DRV
BIAS
CLAMP
CLAMP
VIDEO SWITCH
V_EE_PB
V_EE_REC
A_EE_REC
A_EE_PB


AE/FE HEAD
REC/PB HEAD
BS030
1 AE/FE HEAD
2 GND
BS031
3 A_LIN_REC
4 A_LIN_PB
LS030 BIAS OSCILLATOR
AUDIO SIGNAL REC/PB PROCESSOR
REC OUT
REC
AC BIAS AUTO ADJ
HEAD SW
AMP OUT
PB
REC
EQ
PB EQ
EQ OUT
MUTE
PB
REC EE
PB IN
ALC
ALC DET
LINE IN
LIN
LINE OUT
IS001 LA7286
A_EE_REC
A_EE_PB
IX002 INPUT SELECT
IX001 OUTPUT SELECT
IX002 INPUT SELECT
TX214
TX204
BX002 DECODER
BX001 MAIN SCART

POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNER / FI - NETZEIL INTERFACE / TUNER / ZF - ALIMENTAZONE / TUNER / IF - INTE

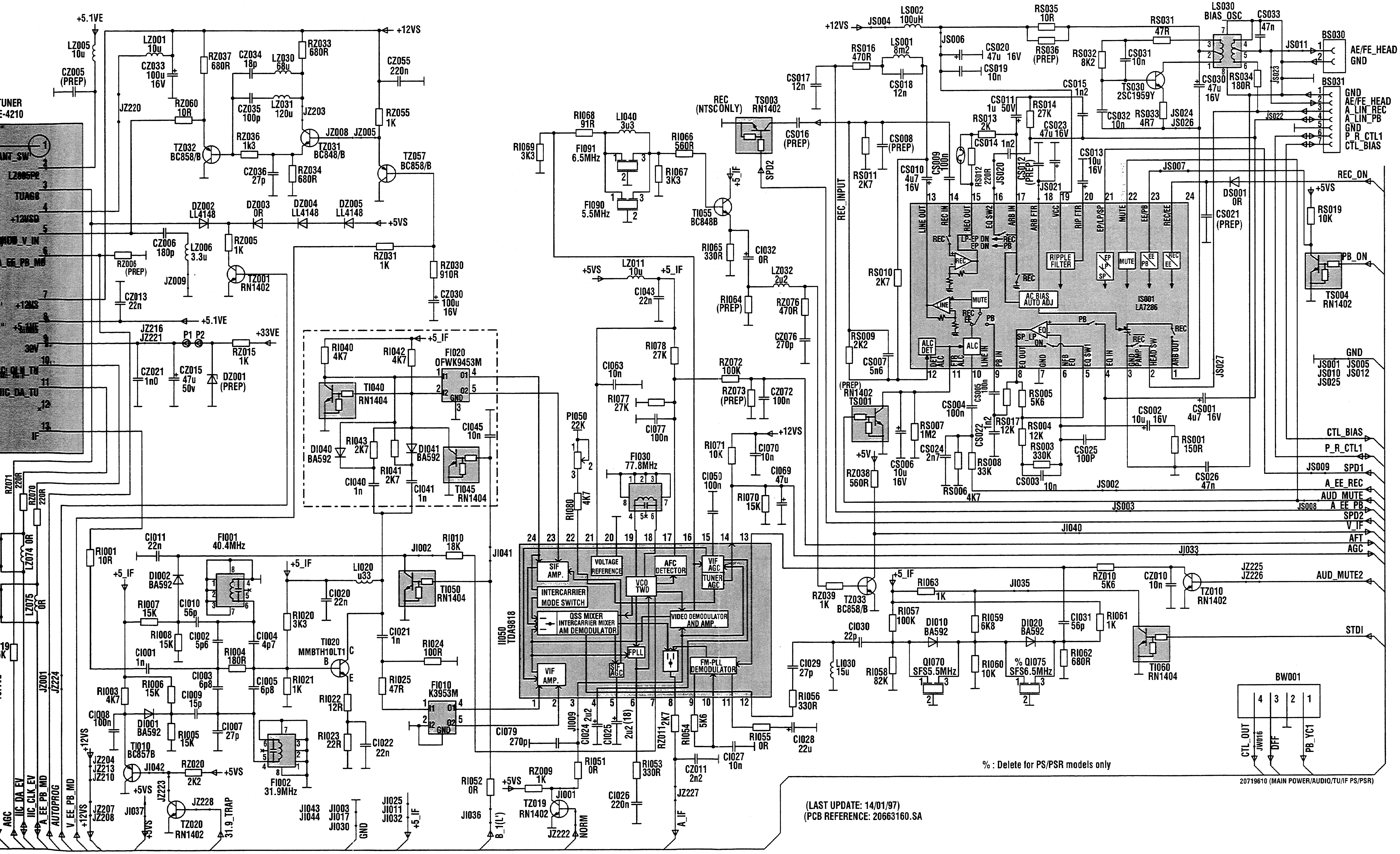
SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


BP001
230-264VAC
AC1
AC2
FP001
T1L 250V
RP001 (PREP)
LP001 2*33mH
CP001 100n 275V
BYW27-1000
DP004
DP003 BYW27-1000
DP002 BYW27-1000
DP001 BYW27-1000
CP010 47u 385V
PGND
CP050 1n0 250Vac
GND
LP050 10444940
RP009 180K
RP007 220K
RP005 220K
RP008 180K
RP006 220K
RP004 220K
DP005 ZMM33
RP011 180K
RP012 0R22
DP012 BAV20
CP021 1n 1KV
TP020 BUL312
RP021 22R
CP023 100u 25V
RP024 47K
RP023 0R33
DP023 FR104
CP020 (PREP)
RP022 4K7
DP020 (PREP)
RP029 1K
TP023 2SA1020
DP024 LL4148
CP024 3n3 63V
RP019 180R
DP019 FR104
JP024
JP002
DP044 ZMM3V9
RP030 22R
RP028 22R
RP026 1K0
RP020 4R7
TP022 BC337-40
WP001
DP041 0R
RP041 7K5
RP040 1K
DP040 BAV20
CP040 1u 100V
RP027 3K
RP046 0R
RP045 0R
RP025 100R
DP025 BAV20
FP044 N10
DP037 LL4148
RP037 3K3
DP038 (PREP)
CP025 4u7 100V
RP038 100R
CP038 82p 50V
JP003
CP022 1n5 50V
DP033 ZPD22
CP032 22n 63V
CP031 22n 63V
RP031 2K2 0.25W
DP031 BAV20
RP033 1K
RP034 470R
RP035 1K
CP041 2n2 50V
DP034 ZPD6.8
IP050 4N25TV
95T 25T 3T 4T 7T 12T 23T 22T 10T
P11 P12 P9 P10
DP051 FR104
CP051 100u 10V
RP052 1R
FP051 N10
JP008 JP006
CP056 470p 400V
DP056 BAV20
RP056 10R
CP053 470p 400V
DP053 BAV20
CP054 33u/50V
DP054 MTZJ30B
RP057 10k
RP092 15K
RP053 10R
RP058 27R
P13 P14
RP082 180K
TP082 BC858B
RP085 1K
JP014
DP082 LL4148
RP084 470K
JP011
DP081 LL4148
CP081 1u 100V
RP086 10K
TP086 BC848B
RP081 10R
CP082 1u 100V
RP083 47K
RP087 10K
JP005
P16
FOR ECO STANDBY ONLY
P4 P3
RP094 1K
DP096 LL4148
DP097 LL4148
RP095 1R 0.25W
TP095 2SA1020
CP095 100u 25V
RP098 150R
TP096 BC337-40
JP020
RP096 (PREP)
DP061 FR104
CP061 220u 35V
RP077 1K
DP064 BYV28-150
LP064 22U
P5 P6
CP064 470u 25V
CP065 100u 25V
P18 P20
P15
CP068 100u 25V
RP065 220R
JW001 JP009
DP066 1N5822
LP066 6u8
P7 P8
CP066 1000u 16V
CP067 1000u 16V
+14VE
RW001 4R7
RW085 1.5R/1W
JW002
P17 P19
CP071 100n 100V
RP071 100R
DP067 MA2062-A
DP071 LL4148
TP071 BC858B
JP019
RP073 330R
RP067 39R
DP073 MTZ4V3C
DW087 1N4001
DW086 1N4001
RP060 (PREP) RP061 (PREP) RP062 (PREP)
JW030
TW003 2SC2236
JP016 JP010
TW002 RN2403
RW011 (PREP)
RW008 (PREP)
RW007 5K1
CP057 47u/50V
TW001 BC848/B
RW002 1K2
RW003 4K7
CW003 100u 16V
DW006 12V
DW007 LL4148
+33VE
RW005 2k2
JP013
CW004 47u
DW010 ZMM5V1/2%
CW002 4.7u
TW005 BC369
RW030 180R (MAXI)
RW006 270R
RW012 0R
TW004 BC548/B
RW081 22K
JW005 JW006
RW010 2K2
RW009 4K7
RW004 12K
JW017
DW015 RLS4153
DW005 (PREP)
TW006 337-40
CW020 100U
TW083 BC368
RW084 220R
RW083 220R
JW015 JW031 JP041
JW032 JW034
+12.6VE_LM +12.6VE_CM +13.3VE_DM +14VE GND ECO_ON_OFF VM_+20VE PG -32VE DVCC +5VS +5.1VE -5VE +33VE POWER_ON +12VS -UH +UH
JW003 JW004 JW007 JW008 JW013
JP001 JP030 JP015 JP017 JP018
PGND GND
+5.1VE
LZ005 10u
CZ005 (PREP)
LZ001 10u
CZ033 100u 16V
JZ220
RZ060 10R
TZ032 BC858/B
TUNER FE-4210
ANT_SW
LZ005P2
TUAGC
+12VSD
MOD_V_IN
A_EE_PB_MD
+12VS
+5.1VE
32V
IIC_CLK_TU
IIC_DA_TU
IF
JZ206
RZ006 (PREP)
CZ006 180p
LZ006 3.3u
JZ009
CZ013 22n
JZ216 JZ221
P1 P2
CZ021 1n0
CZ015 47u 50v
DZ002 LL414
RZ071 220R
RZ070 220R
JZ074 LZ074 0R
JZ075 LZ075 0R
RZ019 56K
RI001 10R
CI011 22n
+5_IF
DI002 BA592
RI007 15K
CI010 56p
RI008 15K
CI002 5p6
CI001 1n
RI006 15K
CI003 6p8
RI003 4K7
CI009 15p
CI008 100n
DI001 BA592
RI005 15K
TI010 BC857B
JI042
RZ020 2K2
+5VS
JI037
JZ223
JZ228
TZ020 RN1402
JZ204 JZ213 JZ210
JZ207 JZ208
JZ202 JZ002 JZ003
JZ215 JZ205 JZ214 JZ001 JZ224
GND ANT_SW +5.1VE AGC IIC_DA_EV IIC_CLK_EV A_EE_PB_MD AUTOPROG V_EE_PB_MD +12VS

⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden
⚠ Safety Part
When repairing, use original part only
⚠ Pièce de securite
N'utilisez que les pieces d'origine

* POSITION PREPARED WITHOUT VALUE ARE NOT USED.

TAZONE / TUNER / IF - INTERFAZ ALIMENTACIÒN / TUNER / IF


+5.1VE
+12VS
+5VS
+5_IF
+33VE
TUNER
E-4210
ANT_SW
TUAGC
+12VSD
IF
TZ032 BC858/B
TZ031 BC848/B
TZ057 BC858/B
TZ001 RN1402
TI040 RN1404
TI045 RN1404
FI020 OFWK9453M
FI030 77.8MHz
FI091 6.5MHz
FI090 5.5MHz
FI001 40.4MHz
FI002 31.9MHz
FI010 K3953M
TI020 MMBTH10LT1
TI050 RN1404
TI010 BC857B
TZ020 RN1402
TZ019 RN1402
TI055 BC848B
II050 TDA9818
SIF AMP.
VOLTAGE REFERENCE
AFC DETECTOR
VIF AGC
TUNER AGC
VCO TWD
INTERCARRIER MODE SWITCH
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
VIDEO DEMODULATOR AND AMP.
FPLL
VIF AMP.
FM-PLL DEMODULATOR
TS003 RN1402
REC (NTSC ONLY)
SPD2
REC_INPUT
TS001 RN1402
IS001 LA7286
RIPPLE FILTER
MUTE
AC BIAS AUTO ADJ
ALC DET
ALC
TS030 2SC1959Y
LS030 BIAS_OSC
BS030
AE/FE_HEAD
GND
BS031
GND
AE/FE_HEAD
A_LIN_REC
A_LIN_PB
GND
P_R_CTL1
CTL_BIAS
REC_ON
TS004 RN1402
PB_ON
CTL_BIAS
P_R_CTL1
SPD1
A_EE_REC
AUD_MUTE
A_EE_PB
SPD2
V_IF
AFT
AGC
TZ033 BC858/B
TZ010 RN1402
AUD_MUTE2
QI070 SFS5.5MHz
QI075 SFS6.5MHz
TI060 RN1404
STDI
BW001
CTL_OUT
DFF
PB_YC1
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_EE_PB_MD
+12VS
31.9_TRAP
GND
+5_IF
B_1(L')
NORM
A_IF

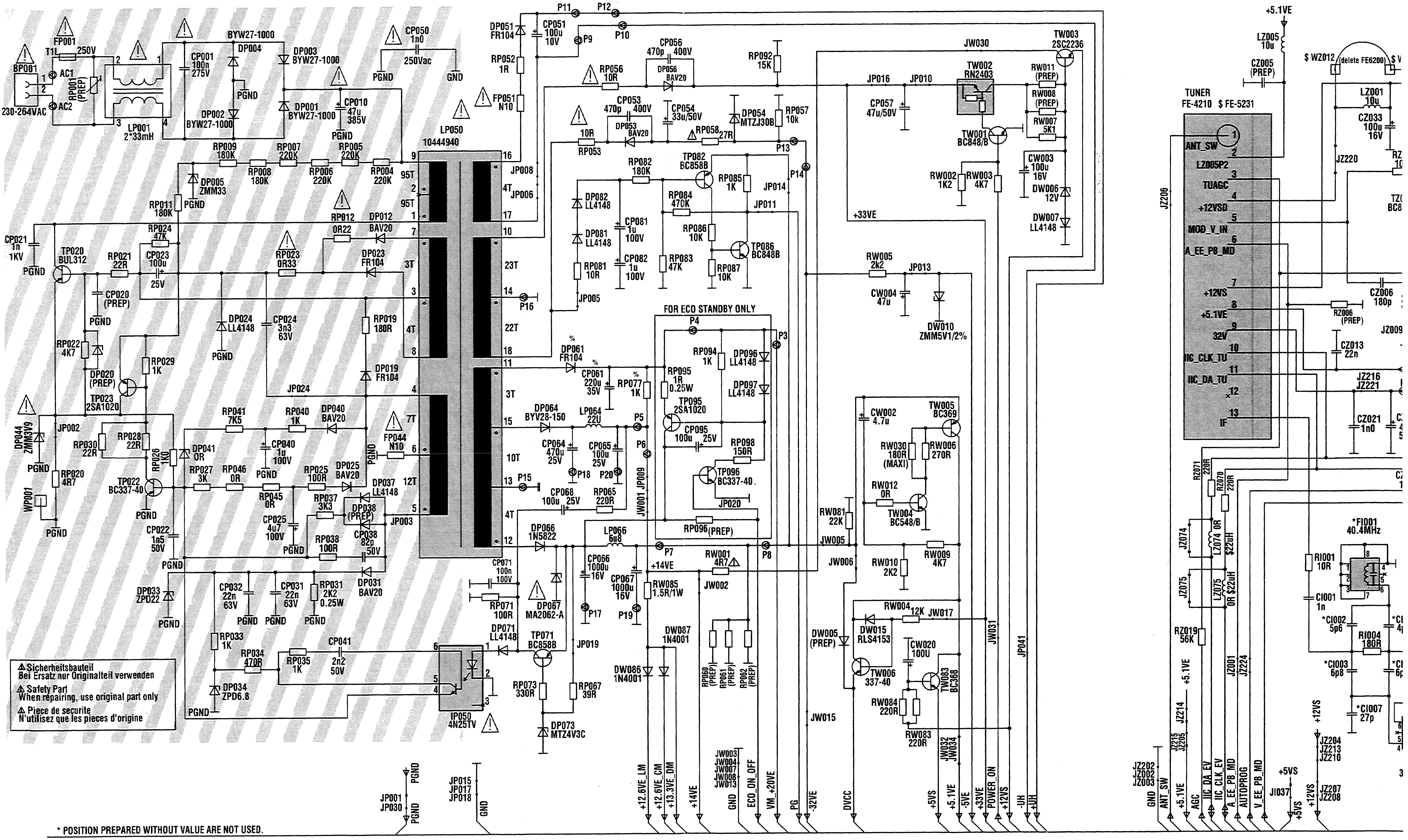
% : Delete for PS/PSR models only

20719610 (MAIN POWER/AUDIO/TU/IF PS/PSR)

(LAST UPDATE: 14/01/97)
(PCB REFERENCE: 20663160.SA)

POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNER / FI - NETZEIL INTERFACE / TUNER / ZF - ALIMENTAZONE / TUNER / IF - INTERFAZ

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


BP001
230-264VAC
AC1
AC2
FP001
T1L 250V
RP001 (PREP)
LP001 2*33mH
CP001 100n 275V
BYW27-1000
DP004
DP002 BYW27-1000
DP003 BYW27-1000
DP001 BYW27-1000
CP010 47u 385V
CP050 1n0 250Vac
PGND
GND
LP050 10444940
RP009 180K
RP008 180K
RP007 220K
RP006 220K
RP005 220K
RP004 220K
DP005 ZMM33
RP011 180K
RP012 0R22
DP012 BAV20
RP024 47K
CP021 1n 1KV
TP020 BUL312
RP021 22R
CP023 100u 25V
RP023 0R33
DP023 FR104
CP020 (PREP)
RP022 4K7
DP020 (PREP)
TP023 2SA1020
RP029 1K
DP024 LL4148
CP024 3n3 63V
RP019 180R
DP019 FR104
JP024
DP044 ZMM3V9
JP002
RP030 22R
RP028 22R
RP026 1K0
DP041 0R
RP041 7K5
RP040 1K
DP040 BAV20
CP040 1u 100V
FP044 N10
RP020 4R7
WP001
TP022 BC337-40
RP027 3K
RP046 0R
RP025 100R
DP025 BAV20
DP037 LL4148
RP045 0R
RP037 3K3
DP038 (PREP)
JP003
CP025 4u7 100V
RP038 100R
CP038 82p 50V
CP022 1n5 50V
DP033 ZPD22
CP032 22n 63V
CP031 22n 63V
RP031 2K2 0.25W
DP031 BAV20
RP033 1K
RP034 470R
RP035 1K
CP041 2n2 50V
DP034 ZPD6.8
IP050 4N25TV
DP051 FR104
CP051 100u 10V
P9 P10 P11 P12
RP052 1R
FP051 N10
JP008
JP006
RP056 10R
CP056 470p 400V
DP056 BAV20
CP053 470p 400V
DP053 BAV20
CP054 33u/50V
DP054 MTZJ30B
RP057 10k
RP092 15K
RP053 10R
RP058 27R
P13 P14
RP082 180K
TP082 BC858B
RP085 1K
JP014
DP082 LL4148
RP084 470K
JP011
CP081 1u 100V
DP081 LL4148
RP086 10K
TP086 BC848B
CP082 1u 100V
RP081 10R
RP083 47K
RP087 10K
JP005
P16
FOR ECO STANDBY ONLY
P3 P4
RP094 1K
DP096 LL4148
DP097 LL4148
RP095 1R 0.25W
TP095 2SA1020
CP095 100u 25V
RP098 150R
TP096 BC337-40
JP020
RP096 (PREP)
DP061 FR104
CP061 220u 35V
RP077 1K
DP064 BYV28-150
LP064 22U
P5 P6
CP064 470u 25V
CP065 100u 25V
P18 P20
P15
CP068 100u 25V
RP065 220R
JW001 JP009
DP066 1N5822
LP066 6u8
P7 P8
CP071 100n 100V
CP066 1000u 16V
CP067 1000u 16V
+14VE
RW085 1.5R/1W
RW001 4R7
JW002
RP071 100R
DP067 MA2062-A
P17 P19
DP071 LL4148
TP071 BC858B
JP019
RP073 330R
RP067 39R
DP073 MTZ4V3C
DW087 1N4001
DW086 1N4001
RP060 (PREP)
RP061 (PREP)
RP062 (PREP)
JW030
TW003 2SC2236
JP016 JP010
TW002 RN2403
RW011 (PREP)
RW008 (PREP)
RW007 5K1
CP057 47u/50V
TW001 BC848/B
CW003 100u 16V
RW002 1K2
RW003 4K7
DW006 12V
DW007 LL4148
+33VE
RW005 2k2
JP013
CW004 47u
DW010 ZMM5V1/2%
CW002 4.7u
TW005 BC369
RW030 180R (MAXI)
RW006 270R
RW012 0R
TW004 BC548/B
RW081 22K
JW005
JW006
RW010 2K2
RW009 4K7
RW004 12K
JW017
DW005 (PREP)
DW015 RLS4153
CW020 100U
TW006 337-40
TW083 BC368
RW084 220R
RW083 220R
JW015
JW031
JP041
JW032 JW034
JP001 JP030
JP015 JP017 JP018
JW003 JW004 JW007 JW008 JW013
+12.6VE_LM
+12.6VE_CM
+13.3VE_DM
+14VE
GND
ECO_ON_OFF
VM_+20VE
PG
-32VE
DVCC
+5VS
+5.1VE
-5VE
+33VE
POWER_ON
+12VS
-UH
+UH
+5.1VE
LZ005 10u
CZ005 (PREP)
$ WZ012 (delete FE6200)
TUNER FE-4210 $ FE-5231
ANT_SW
LZ005P2
TUAGC
+12VSD
MOD_V_IN
A_EE_PB_MD
+12VS
+5.1VE
32V
IIC_CLK_TU
IIC_DA_TU
IF
JZ206
JZ220
LZ001 10u
CZ033 100u 16V
CZ006 180p
RZ006 (PREP)
CZ013 22n
JZ009
JZ216 JZ221
CZ021 1n0
RZ071 220R
RZ070 220R
JZ074
LZ074 0R $22uH
JZ075
LZ075 0R $22uH
RZ019 56K
*FI001 40.4MHz
RI001 10R
CI001 1n
*CI002 5p6
RI004 180R
*CI003 6p8
*CI007 27p
JZ214
JZ215 JZ205
JZ001
JZ224
JZ202 JZ002 JZ003
JZ204 JZ213 JZ210
JZ207 JZ208
JI037
ANT_SW
+5.1VE
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_EE_PB_MD
+5VS
+12VS

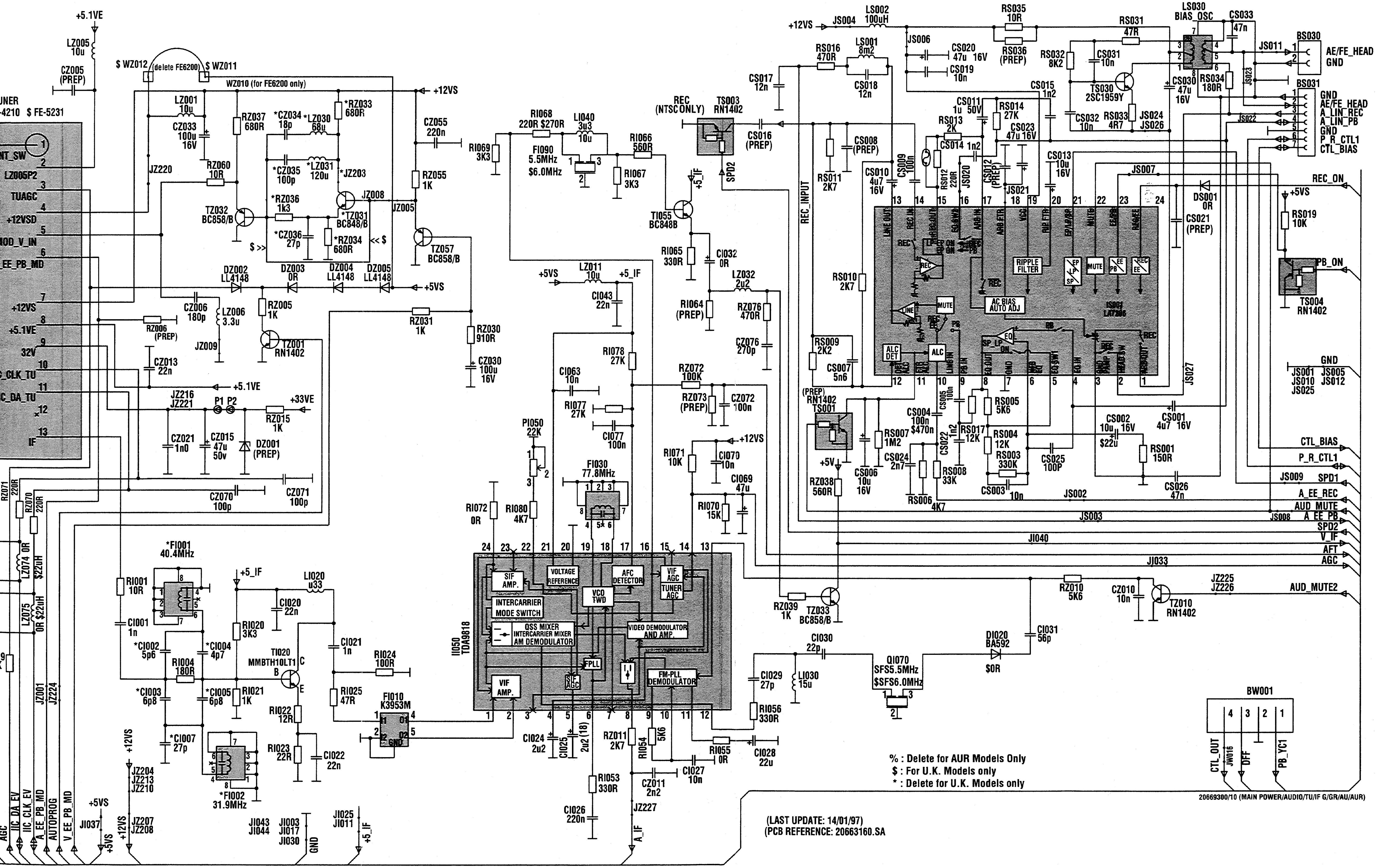
⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden

⚠ Safety Part
When repairing, use original part only

⚠ Piece de securite
N'utilisez que les pieces d'origine

* POSITION PREPARED WITHOUT VALUE ARE NOT USED.

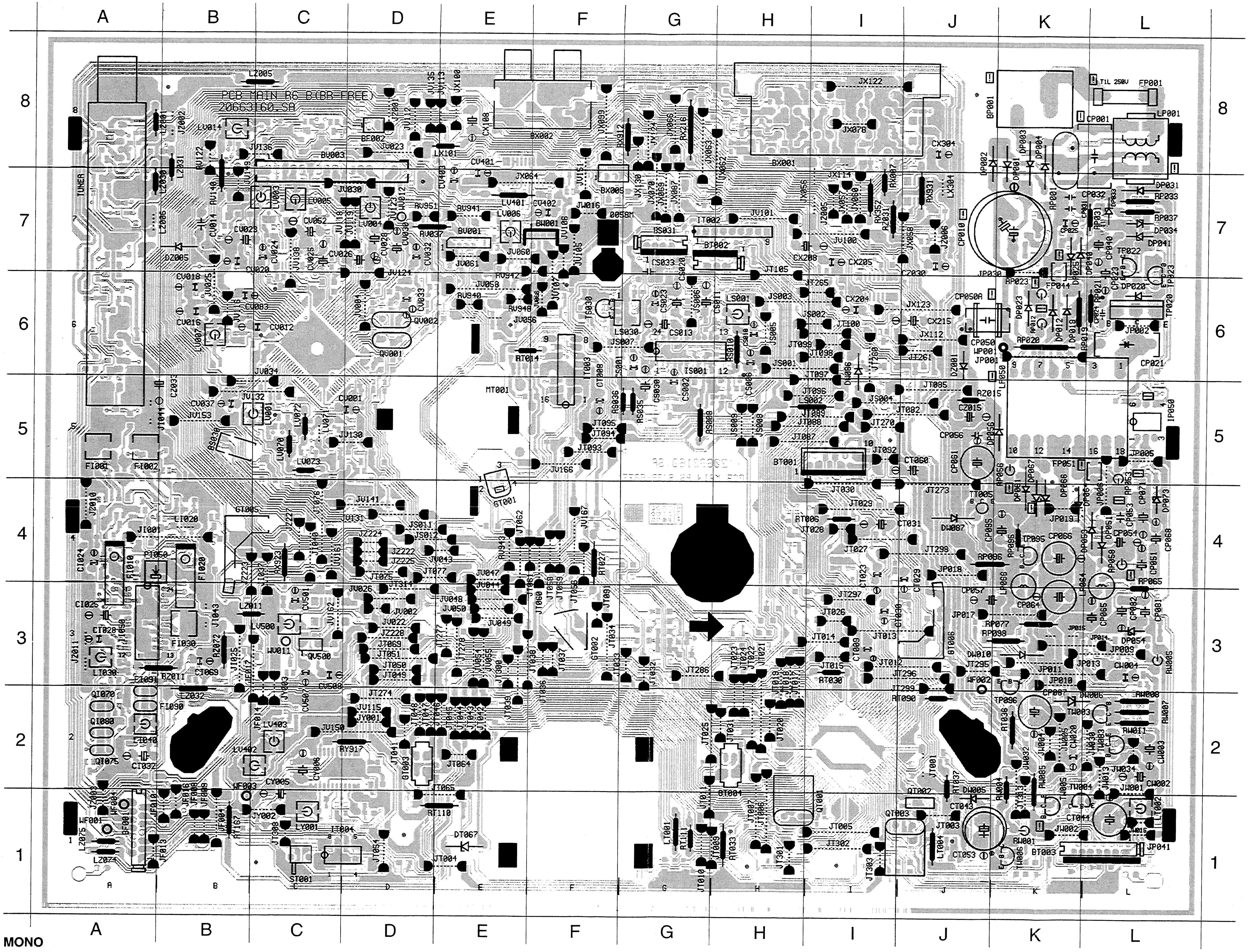
E / TUNER / IF - INTERFAZ ALIMENTACIÒN / TUNER / IF


+5.1VE
LZ005 10u
CZ005 (PREP)
$ WZ012 (delete FE6200) $ WZ011
WZ010 (for FE6200 only)
+12VS
UNER
-4210 $ FE-5231
NT_SW
LZ005P2
TUAGC
+12VSD
IOD_V_IN
_EE_PB_MD
+12VS
+5.1VE
32V
_CLK_TU
C_DA_TU
IF
LZ001 10u
CZ033 100u 16V
RZ037 680R
*CZ034 18p
*LZ030 68u
*RZ033 680R
CZ055 220n
RZ060 10R
JZ220
*CZ035 100p
*LZ031 120u
*JZ203
RZ055 1K
*RZ036 1k3
JZ008
JZ005
TZ032 BC858/B
*TZ031 BC848/B
*CZ036 27p
*RZ034 680R
TZ057 BC858/B
DZ002 LL4148
DZ003 0R
DZ004 LL4148
DZ005 LL4148
+5VS
CZ006 180p
LZ006 3.3u
RZ005 1K
RZ031 1K
RZ030 910R
RZ006 (PREP)
JZ009
TZ001 RN1402
CZ013 22n
CZ030 100u 16V
+5.1VE
JZ216 JZ221
P1 P2
+33VE
RZ015 1K
CZ021 1n0
CZ015 47u 50v
DZ001 (PREP)
CZ070 100p
CZ071 100p
RZ071 220R
RZ070 220R
LZ074 0R $22uH
LZ075 0R $22uH
JZ001
JZ224
RI001 10R
*FI001 40.4MHz
CI001 1n
*CI002 5p6
*CI004 4p7
RI004 180R
*CI003 6p8
*CI005 6p8
RI021 1K
*CI007 27p
*FI002 31.9MHz
+5_IF
LI020 u33
CI020 22n
RI020 3K3
TI020 MMBTH10LT1
CI021 1n
RI024 100R
RI025 47R
FI010 K3953M
RI022 12R
RI023 22R
CI022 22n
JZ204 JZ213 JZ210
JZ207 JZ208
JI037
+5VS
+12VS
JI043 JI044
JI003 JI017 JI030
GND
JI025 JI011
+5_IF
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_EE_PB_MD
RI068 220R $270R
LI040 3u3
FI090 5.5MHz $6.0MHz
10u
RI066 560R
RI069 3K3
RI067 3K3
REC (NTSC ONLY)
TS003 RN1402
CS016 (PREP)
SPD2
+5_IF
TI055 BC848B
RI065 330R
CI032 0R
LZ032 2u2
RI064 (PREP)
RZ076 470R
CZ076 270p
+5VS
LZ011 10u
+5_IF
CI043 22n
RI078 27K
RZ072 100K
RZ073 (PREP)
CZ072 100n
PI050 22K
CI063 10n
RI077 27K
CI077 100n
FI030 77.8MHz
RI071 10K
CI070 10n
+12VS
CI069 47u
RI070 15K
RI072 0R
RI080 4K7
II050 TDA9818
SIF AMP.
VOLTAGE REFERENCE
AFC DETECTOR
VIF AGC
TUNER AGC
VCO TWD
INTERCARRIER MODE SWITCH
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
VIDEO DEMODULATOR AND AMP.
FPLL
SIF AGC
FM-PLL DEMODULATOR
VIF AMP.
CI024 2u2
CI025 2u2 (18)
RZ011 2K7
RI054 5K6
RI055 0R
CI028 22u
CI027 10n
CZ011 2n2
RI053 330R
CI026 220n
JZ227
A_IF
+12VS
JS004
LS002 100uH
RS016 470R
LS001 8m2
JS006
CS020 47u 16V
CS019 10n
CS017 12n
CS018 12n
RS035 10R
RS036 (PREP)
RS031 47R
LS030 BIAS_OSC
CS033 47n
RS032 8K2
CS031 10n
TS030 2SC1959Y
CS030 47u 16V
RS034 180R
JS023
JS011
BS030
AE/FE_HEAD
GND
BS031
GND
AE/FE_HEAD
A_LIN_REC
A_LIN_PB
GND
P_R_CTL1
CTL_BIAS
CS015 1n2
CS011 1u 50V
RS014 27K
RS013 2K
CS023 47u 16V
CS014 1n2
CS032 10n
RS033 4R7
JS024 JS026
JS022
RS011 2K7
CS008 (PREP)
CS010 4u7 16V
CS009 100n
RS012 220R
JS020
CS012 (PREP)
JS021
CS013 10u 16V
JS007
REC_ON
REC_INPUT
IS001 LA7286
RIPPLE FILTER
MUTE
AC BIAS AUTO ADJ
ALC DET
ALC
LINE
EQ
SP LP
DS001 0R
CS021 (PREP)
+5VS
RS019 10K
PB_ON
TS004 RN1402
RS010 2K7
RS009 2K2
CS007 5n6
(PREP) RN1402 TS001
CS004 100n $470n
CS005 100n
RS007 1M2
CS022 1n2
RS017 12K
RS005 5K6
RS004 12K
RS003 330K
CS024 2n7
RS008 33K
RS006 4K7
CS006 10u 16V
CS003 10n
CS025 100P
CS002 10u 16V $22u
CS001 4u7 16V
RS001 150R
CS026 47n
JS027
GND
JS001 JS005
JS010 JS012
JS025
CTL_BIAS
P_R_CTL1
JS009 SPD1
A_EE_REC
AUD_MUTE
JS008 A_EE_PB
SPD2
V_IF
AFT
AGC
JS002
JS003
JI040
JI033
RZ038 560R
+5V
RZ039 1K
TZ033 BC858/B
RZ010 5K6
CZ010 10n
TZ010 RN1402
JZ225 JZ226
AUD_MUTE2
CI030 22p
QI070 SFS5.5MHz $SFS6.0MHz
CI029 27p
LI030 15u
RI056 330R
DI020 BA592
$0R
CI031 56p
BW001
CTL_OUT
JW016
DFF
PB_YC1
20669300/10 (MAIN POWER/AUDIO/TU/IF G/GR/AU/AUR)

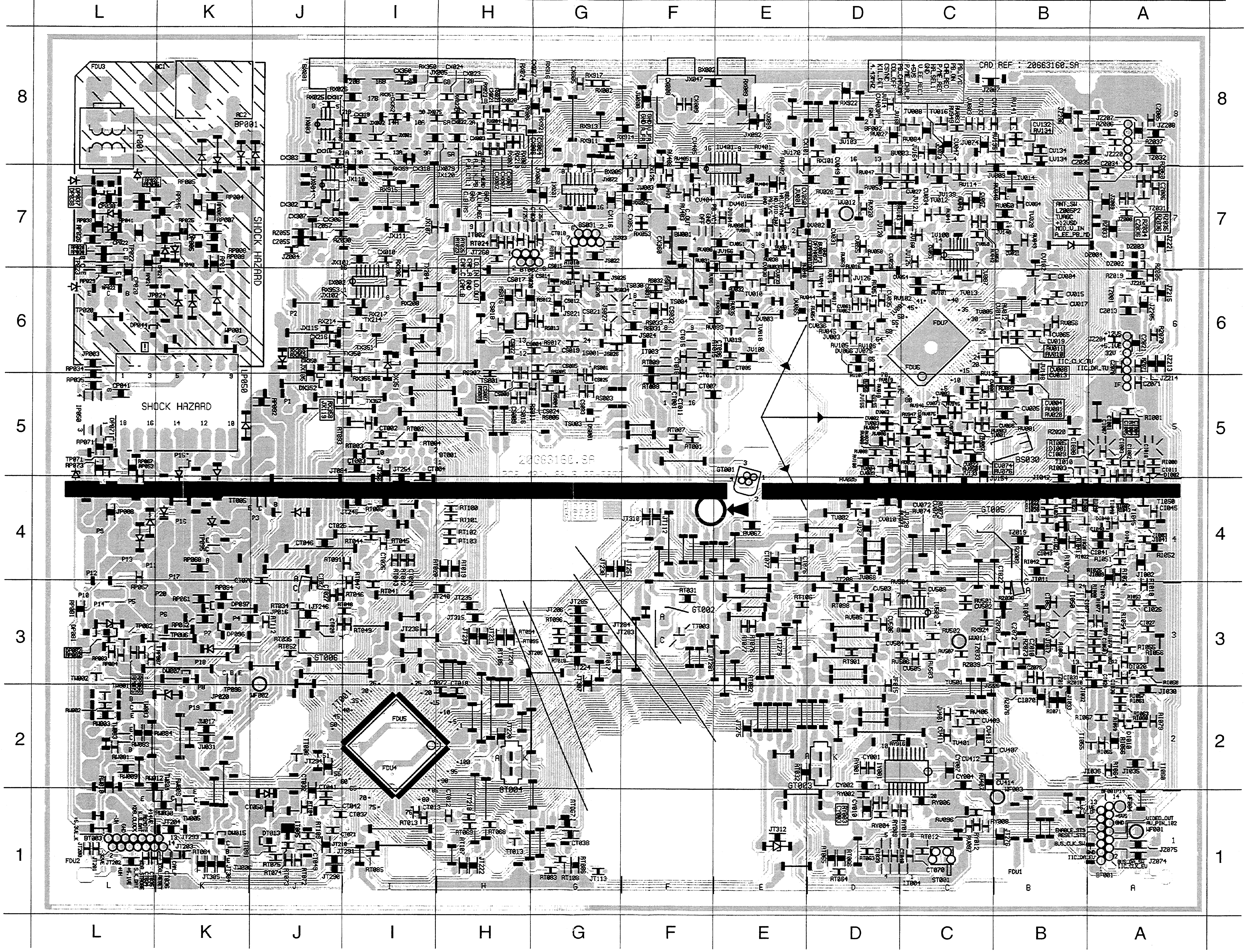
% : Delete for AUR Models Only
$: For U.K. Models only
* : Delete for U.K. Models only

(LAST UPDATE: 14/01/97)
(PCB REFERENCE: 20663160.SA

Main P.C.B. components side • Circuit imprimé de la platine principale côté composants • Hauptleiterplatte Bestückungsseite Piastra principale lato componenti • Platina principal lado componentes


A
B
C
D
E
F
G
H
I
J
K
L
8
7
6
5
4
3
2
1
PCB MAIN R6 B(BR FREE)
20663160 SA
TUNER
T1L 250V
FP001
BP001
LP001
JX122
BX001
BX002
MT001
GT001

Main P.C.B. Solder side • Circuit imprimé de la platine principale côté cuivre • Hauptleiterplatte Lötseite
Piastra principale lato saldature • Platina principal lado del cobre


L
K
J
I
H
G
F
E
D
C
B
A
8
7
6
5
4
3
2
1
CAD REF : 20663160.SA
SHOCK HAZARD
FDU5
FDU4
FDU7
FDU6
FDU1
FDU2
FDU3
VIDEO_OUT
AV_PIN_102

COMPONENTS LOCATION - LOCALISATION DES ELEMENTS - LAGE DER BAUTEILE LOCALIZZAZIONE DEI COMPONENTI - LOCALIZACION DE LOS COMPONENTS

* SOLDER SIDE - COTE CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE

1	2	3

BF001	A1
BF001*	A1
BF002	D8
BF002*	D8
BP001	J8
BP001*	K8
BS003	C8
BS030	B5
BS031	G7
BS031*	G7
BT001	H5
BT001*	H5
BT002	G7
BT002*	H6
BT003	K1
BT003*	L1
BV001	E7
BV003*	C8
BV003*	D8
BW001	F7
BW001*	F7
BX001	H8
BX001*	J8
BX002	F8
BX002*	F8
BX005	F7
BX005*	G7

CI001*	A5
CI002*	A5
CI003*	A5
CI004*	A5
CI005*	A5
CI007*	A5
CI008*	B5
CI009*	B5
CI010*	A5
CI011*	A5
CI022*	B4
CI024	A4
CI025	A3
CI026*	A3
CI027*	A3
CI028	A3
CI028*	B4
CI029*	A3
CI031*	B3
CI032	A2
CI038*	A3
CI040*	A4
CI041*	A4
CI043*	B4
CI045*	A4
CI058*	A3
CI063*	B3
CI069	B3
CI070*	B2
CI077*	B3
CI079*	A3
CP010	J7
CP020*	L6
CP021	L6
CP022*	L7
CP024	L6
CP025	K7
CP031	K7
CP032	L7
CP038*	L7
CP040	L7
CP041*	L5
CP050	J6
CP050	J6
CP051	L4
CP053	L4
CP053	L4
CP054	L4
CP056	J5
CP057	J3
CP061	J5

CP064	K3
CP065	L3
CP066	K4
CP068	L4
CP071	L4
CP081	L3
CP082	L3
CP087	K2
CP095	J4
CS001	F6
CS002	G5
CS003*	G5
CS004*	G6
CS006	H5
CS007*	H5
CS008*	H5
CS009*	H5
CS010	H6
CS011	H6
CS012*	G6
CS013	G6
CS014*	G6
CS015*	G7
CS016*	H5
CS017*	H6
CS018*	H6
CS019*	G6
CS020	G7
CS021*	G6
CS022*	F6
CS022*	H6
CS023	G6
CS024*	G5
CS026*	G5
CS026*	G6
CS030	G5
CS031*	F6
CS033	G7
CT001*	F5
CT002*	I5
CT003*	I5
CT004*	I5
CT005*	E6
CT006*	E6
CT007*	F5
CT008	F6
CT009	I3
CT010*	C1
CT011*	F5
CT012*	H1
CT012*	I1
CT013	J1
CT013*	I1
CT014*	F5
CT016*	F6
CT018*	F6
CT018*	I3
CT020*	G7
CT021*	J4
CT022*	B4
CT023	I4
CT024*	I4
CT025*	I4
CT026*	I4
CT027*	J3
CT028*	J3
CT029	J4
CT030	I3
CT031	J4
CT032*	J2
CT034*	L1
CT035*	L1
CT036*	K1
CT037*	I1
CT038*	G1
CT039*	D1
CT044	K1
CT046*	J4
CT049*	J1
CT050*	J1
CT053	J1
CT060	J5
CT070*	C1
CT071*	I1

CT072*	I3
CT076*	E4
CT077*	E4
CT918*	G7
CV001	D5
CV002*	D5
CV003*	C5
CV004*	B5
CV005*	B5
CV008*	B6
CV010*	D4
CV011*	B6
CV012	C6
CV012*	B7
CV013*	B6
CV014	B7
CV015*	B6
CV016	B6
CV017*	B6
CV018	B6
CV019*	B6
CV020	C7
CV021*	B7
CV022*	C5
CV023	B7
CV024	C7
CV025	C7
CV026	C7
CV027*	C7
CV028	D7
CV029*	D7
CV030	D7
CV031*	D7
CV032	D7
CV033	D6
CV034*	C7
CV035*	D6
CV036*	C5
CV036*	D6
CV037	B5
CV038*	E6
CV039*	E6
CV047*	C8
CV049*	D7
CV050*	E7
CV051*	E7
CV052	C7
CV053*	C7
CV053*	C7
CV055*	D7
CV057*	C7
CV061*	D6
CV062*	D5
CV064*	B7
CV064*	C6
CV065*	B6
CV066*	B5
CV071*	C5
CV072*	C4
CV073*	C5
CV074*	B5
CV075*	C4
CV083	C6
CV084*	B6
CV087*	C6
CV132*	B8
CV133*	C8
CV134*	B8
CV148*	C8
CV258*	C7
CV401	E8
CV403*	D8
CV405*	F8
CV407*	B2
CV409*	C2
CV411*	C2
CV412*	C2
CV413*	C2
CV414*	B2
CV428	E7
CV482	F7
CV484*	F7
CV501	C3
CV502*	C3

CV503*	D3
CV504*	D3
CV505*	C3
CV506*	D3
CV507	C2
CV508	C2
CV509*	C3
CV868*	C7
CW002	L2
CW003	L2
CW004	L3
CW020	K2
CX001*	H7
CX002*	H7
CX003*	H8
CX004*	G8
CX005*	G8
CX007*	H7
CX008*	F8
CX009*	F8
CX010*	I7
CX021*	H8
CX022*	H8
CX023*	H8
CX024*	H8
CX027*	G8
CX028*	H8
CX053*	F7
CX101*	E8
CX108	E8
CX116*	G7
CX204	I6
CX205	I7
CX208	H7
CX215	J6
CX216*	J6
CX302*	J7
CX303*	J8
CX304	J8
CX306*	J7
CX307*	J7
CX314*	J7
CX316*	J8
CX317*	J8
CX318*	I7
CX319*	I8
CX350*	I8
CX352*	I8
CX368*	F7
CY001*	D2
CY002*	D2
CY003*	D1
CY004*	C2
CY005	C2
CY006	C2
CY007*	C2
CY010*	D1
CZ005*	A8
CZ006*	A7
CZ010*	B3
CZ011*	B3
CZ013*	A6
CZ015	J5
CZ021*	A6
CZ030	J7
CZ033	B5
CZ034*	A8
CZ036*	A7
CZ055*	J7
CZ070*	A6
CZ071*	A5
CZ072*	B3
CZ076*	B3
CZ835*	B8

DF041*	A4
DH005	J2
DI001*	B5
DI002*	A5
DI009*	A4
DI010*	A2

DI020*	A3
DI040*	A4
DP001	K8
DP001	L8
DP002	J8
DP003	K8
DP004	K8
DP005*	K7
DP010	L7
DP012	K6
DP019	K6
DP020	L6
DP023	K6
DP024*	K7
DP031	L7
DP033	L7
DP034	L7
DP037*	L7
DP038*	L7
DP041	L7
DP044*	L6
DP051	L4
DP053	K4
DP053	L4
DP054	L3
DP056	J5
DP061	K4
DP064	K4
DP066	K4
DP067	K5
DP071*	L5
DP081*	L3
DP082*	L3
DP096*	K3
DP097*	K3
DR025	K7
DS001*	G5
DT004	E1
DT013*	J1
DT067	E1
DV002*	D7
DV003*	E6
DV065*	E6
DV066*	D6
DV401*	E7
DW006	L2
DW007*	K3
DW010	J3
DW015*	K1
DW086	I6
DW097	J4
DX125*	F7
DX350*	J6
DX351*	I5
DX352*	J5
DZ001	J6
DZ002*	A7
DZ003*	A7
DZ004*	A7
DZ005	B7

FI001	A5
FI002	A5
FI010	A4
FI020	B4
FI030	B3
FI050	B2
FI091	A3
FP001	L8
FP044	K6
FP051	K5

II050	A3
II050*	B3
IP050	L5
IP050*	L5
IS001	G6
IS001*	G6

IT001*	I2
IT002	G7
IT002*	H7
IT003	F6
IT003*	F6
IT004	C1
IT004*	C1
IT005*	J1
IV100*	C7
IV401*	E8
IV500*	C3
IX001*	G7
IX002*	J6
IX004*	J7
IY001*	D2

JC069	G7
JF004	B1
JF008	B1
JF009	B1
JF013	B1
JF014	C2
JF015*	D3
JF016	B1
JF017	B3
JF10	A1
JI002*	A4
JI003*	A4
JI011*	B4
JI017*	B3
JI021	A4
JI025	B3
JI032*	B2
JI033*	B2
JI034	C4
JI035*	A2
JI036*	A2
JI038*	A2
JI040	C4
JI041*	A4
JI042*	B5
JI043	B3
JI044	B5
JP002	L6
JP003*	L6
JP005	L5
JP006	L4
JP008*	L4
JP009	L3
JP010	K3
JP011	K3
JP013	L3
JP014	L3
JP015	K3
JP016*	J3
JP017	J3
JP018	J4
JP019	KA
JP020*	K2
JP024*	K6
JP030	J7
JP041	L1
JP201	J6
JS001	H6
JS002	I6
JS003	H6
JS004	I5
JS005	H6
JS006	G6
JS007	G6
JS008	H5
JS009	H5
JS011	D4
JS012	D4
JS020*	H6
JS021*	G6
JS022*	G7
JS023*	G7
JS024*	F6
JS025*	G6
JS026*	G6
JS027*	G6

JT001	J2
JT003	J1
JT005	I1
JT006	H1
JT007	H1
JT009	H1
JT010	G1
JT011	G1
JT012	I3
JT013	I3
JT014	I3
JT015	I3
JT017	H3
JT018	H3
JT019	H3
JT020	H2
JT021	H3
JT022	H3
JT023	H3
JT024	H3
JT025	G2
JT026	I3
JT027	I4
JT028	H4
JT029	I4
JT030	I4
JT031	H2
JT032	G3
JT033	F3
JT034	F3
JT036	F3
JT037	F3
JT038	F3
JT039	E2
JT042	E2
JT043	E2
JT044	E2
JT045	E2
JT046	E2
JT048	D2
JT048	D2
JT049	D3
JT050	D3
JT051	D3
JT054	D1
JT056	F3
JT058	F3
JT059	F3
JT060	F3
JT061	E3
JT062	E4
JT064	E2
JT064*	J5
JT065	E2
JT069	D3
JT075	D4
JT076	C4
JT077	D4
JT084*	IS
JT087	H5
JT088	I5
JT091	F3
JT092	I5
JT092	J5
JT093	F5
JT094	F5
JT095	F5
JT095	J5
JT096	I5
JT098	I6
JT098	I6
JT099	H6
JT099	I5
JT100	I6
JT105	H7
JT112*	F4
JT113*	G1
JT200*	L1
JT201*	F3
JT201*	L1
JT202*	L1
JT203*	K1
JT204*	K1
JT206*	G3

JT206*	H3
JT208*	D4
JT210*	I1
JT218*	H1
JT220*	H2
JT222*	H1
JT224*	G3
JT228*	H3
JT230*	G4
JT231*	H3
JT232*	H3
JT235*	H3
JT236*	I3
JT240*	H3
JT241	D2
JT245*	I4
JT246*	J3
JT251*	F4
JT253*	G7
JT254*	I5
JT255*	G7
JT256*	I5
JT260	I6
JT261	J6
JT265	I6
JT268*	H7
JT270	I5
JT273	J4
JT274	D2
JT275*	E2
JT276*	B1
JT277	E3
JT278	E3
JT279*	E3
JT283*	F3
JT284*	F3
JT285*	G3
JT286	G3
JT290*	J1
JT291*	I1
JT293*	K1
JT294*	J2
JT295	J3
JT296	J3
JT297	I3
JT298	J4
JT299	J3
JT300	E3
JT301	H1
JT302	I1
JT303	I1
JT304*	K1
JT305*	K1
JT307*	G3
JT308	C1
JT310*	F4
JT312*	E1
JT313	K1
JT314	D3
JT315*	H3
JV001*	E7
JV002	D3
JV003	D8
JV003*	D6
JV004	D6
JV009*	B7
JV022	D3
JV025	B6
JV026	D3
JV030	D7
JV034	C6
JV043	D4
JV044	E3
JV047	E4
JV048	E3
JV049	E3
JV050	E3
JV050	E7
JV054	E3
JV055	E3
JV056	E6
JV058	E6
JV061	E7
JV066	F6

JV068*	D4
JV073*	C8
JV074*	C8
JV075*	D6
JV083*	C8
JV100	I7
JV101	H7
JV103*	D8
JV104*	E7
JV105	F7
JV106	F7
JV107	F6
JV108*	E6
JV112	D8
JV113	D8
JV114*	D8
JV115	D2
JV116	B6
JV118	C7
JV119	D7
JV120*	D7
JV121*	C7
JV123	D7
JV124	D6
JV125*	C7
JV126*	D6
JV128*	C4
JV130	D5
JV131	D4
JV132	C5
JV133*	C5
JV135	D8
JV136	C8
JV137*	D4
JV138	C7
JV139*	C7
JV141	D4
JV145*	D5
JV148*	B6
JV148*	B7
JV149	B7
JV150	C2
JV151	F7
JV153	B5
JV155*	D5
JV156*	E7
JV160*	C7
JV161	C4
JV162	C3
JV164*	B5
JV164*	C8
JV165*	E7
JV167	F4
JV168*	D8
JV170*	E8
JV186	F5
JV401*	C2
JW001	L2
JW002	K1
JW003*	F7
JW004	K2
JW005	K2
JW008*	F8
JW013	L2
JW015	L1
JW016	F7
JW017*	K2
JW030	L2
JW031*	K2
JW032	K2
JW034	L2
JX001*	I8
JX003*	J8
JX005*	H8
JX005*	I8
JX009*	E8
JX047*	F8
JX050	I7
JX057	I7
JX063	G8
JX064	E7
JX066	G8
JX067	G7
JX068*	G7
JX070	G7
JX072*	G7
JX075*	I8
JX078	I8
JX079*	H7
JX092*	E8
JX099	F8

JX100	E8
JX101*	J7
JX102*	J6
JX105*	J5
JX107*	I7
JX110*	I7
JX111*	I7
JX112	J6
JX114	I7
JX115*	J6
JX119*	J5
JX120*	H7
JX122	I8
JX123	J6
JX124	G8
JX138	G7
JX258	J7
JY001	D2
JY002	C1
JY003	C2
JY056	H7
JY062	H8
JZ001	D8
JZ002	B8
JZ003	A1
JZ004*	C8
JZ004*	J7
JZ005	I7
JZ006	J7
JZ008*	A7
JZ009*	A7
JZ010	A4
JZ011	A3
JZ074*	A1
JZ075*	A1
JZ204*	A6
JZ205*	A6
JZ206*	B8
JZ208*	A8
JZ208*	A8
JZ213*	A6
JZ214*	A5
JZ215*	A6
JZ216*	A6
JZ220*	A8
JZ221*	A7
JZ222	D4
JZ223	B4
JZ224	D4
JZ225	D4
JZ226*	C3
JZ227	C4
JZ228	D3

LI020	B4
LI030	A3
LI040	A2
LP001	L8
LP001*	L8
LP050	K5
LP064	K4
LP066	K4
LS001	H6
LS002	I5
LS030	G6
LT001	G1
LT002	L1
LT004	J1
LV001	C5
LV003	C7
LV004	D7
LV005	C7
LV006	E7
LV007	B6
LV014	B8
LV070	C5
LV071	C5
LV072	C5
LV073	C5
LV134*	B8
LV401	E7
LV402	B2
LV403	C2
LV500	C3
LX006*	G8
LX101	E8
LX304	J7
LY001	C1
LZ001	B8

LZ005	C8
LZ006	B7
LZ011	B3
LZ030	B7
LZ031	B7
LZ032	B2
LZ074	A1
LZ075	A1

PI050	A4

QI070	A2
QI075	A2
QI080	A2
QT001	I1
QT002	J2
QT003	I1
QV001	D6
QV002	D6
QV500	C3

RI001*	A5
RI003*	B5
RI004*	A5
RI005*	B5
RI006*	B4
RI007*	A4
RI020*	B4
RI021*	B4
RI022*	B4
RI023*	B4
RI024*	A4
RI025*	A4
RI040*	A4
RI041*	B4
RI042*	B4
RI043*	A4
RI051*	A4
RI052*	A4
RI053*	A3
RI054*	A3
RI055*	A3
RI056*	A3
RI057*	A2
RI058*	A3
RI060*	A2
RI061*	A2
RI062*	A3
RI063*	A2
RI064*	A2
RI065*	A2
RI066*	A2
RI067*	B2
RI068*	B3
RI069*	A2
RI069*	A3
RI070*	A3
RI071*	B2
RI072*	B4
RI077*	A3
RI078*	B3
RI079*	A2
RI080*	A3
RI088*	A5
RP001	K7
RP004*	K7
RP005*	K7
RP006*	K7
RP007*	K3
RP007*	K7
RP008*	K7
RP009*	K7
RP011*	K7
RP012	K6
RP019	K6
RP020	K6
RP021	L6
RP022*	L6
RP023	K6
RP024*	L6
RP025*	K7
RP027*	L7
RP028*	L7

RP029*	L6
RP031	L7
RP033	L7
RP034*	L6
RP035*	L5
RP037	L7
RP038*	L7
RP038*	L7
RP040*	K7
RP041*	L7
RP045*	K7
RP046*	L7
RP052*	J5
RP056	K5
RP057*	L3
RP058	L4
RP060*	K4
RP061*	K3
RP062*	K3
RP065	L4
RP067*	L5
RP071*	L5
RP073*	L5
RP077	K3
RP081*	L3
RP082*	L3
RP083*	L3
RP084*	L3
RP085*	L3
RP086*	L3
RP092*	J5
RP094*	K3
RP095	K4
RP096	J4
RP098	K3
RS003*	G5
RS004*	G5
RS006*	G5
RS007*	H5
RS008	G5
RS009*	H5
RS010	H6
RS011*	H5
RS012*	G6
RS013*	G6
RS014*	G6
RS016*	H6
RS017*	G6
RS019*	F6
RS031*	F6
RS032*	F6
RS033*	F6
RS034*	G6
RS035	G5
RS036	F5
RT001*	F5
RT001*	K1
RT002*	I5
RT003*	I5
RT004*	IS
RT004*	K1
RT005*	I4
RT006	H4
RT007*	F5
RT008*	F5
RT009*	F6
RT010*	G7
RT011*	G7
RT012*	C1
RT013*	I1
RT014	E6
RT015*	E6
RT017*	G3
RT018*	G3
RT019*	H4
RT020*	H4
RT023*	H7
RT024*	H7
RT025*	H7
RT027	F4
RT030	I3
RT031*	F3
RT032*	E2
RT033	H1
RT034*	J3
RT035*	J3
RT036	K2
RT037	J2
RT041*	I3
RT042*	I4
RT043*	I4

RT044*	I4
RT045*	I4
RT046*	I3
RT047*	I4
RT048*	J3
RT049*	I3
RT052*	J3
RT063*	D1
RT064*	D1
RT065*	D1
RT066*	D1
RT067*	G1
RT068*	H1
RT069*	H1
RT072*	J1
RT073*	J1
RT074*	J1
RT075*	J1
RT076*	E3
RT077*	E3
RT082*	E2
RT083*	G1
RT086*	G1
RT090	J2
RT091*	J4
RT093*	J5
RT094*	H3
RT095*	H3
RT096*	G3
RT098*	D3
RT100*	H4
RT101*	H4
RT102*	H4
RT103*	H4
RT104*	J1
RT105*	H3
RT106*	D3
RT107*	H1
RT108*	G1
RT109*	J1
RT110	E1
RT111	G1
RT112*	J3
RT167	B1
RT901*	D3
RV001*	B5
RV001*	B5
RV002*	B5
RV002*	C5
RV003*	B5
RV004*	D5
RV005*	D5
RV006*	D5
RV007*	D5
RV008*	D5
RV008*	D5
RV010*	B6
RV011*	B6
RV012*	B6
RV012*	C6
RV013*	D7
RV015*	D6
RV015*	D6
RV016*	D7
RV017*	D6
RV018*	D5
RV020*	B5
RV027*	D8
RV028*	D7
RV031*	F7
RV032*	E6
RV035*	E6
RV037	D7
RV038*	E7
RV039*	E7
RV040*	E6
RV041*	C7
RV043*	C7
RV045*	D6
RV047*	D7
RV049*	B7
RV050*	B7
RV051*	D6
RV052*	D6
RV053*	D7
RV054*	D6
RV056*	B6
RV058*	D7
RV059*	D7
RV060*	E7
RV067*	E4

RV070*	D5
RV071*	C4
RV072*	C5
RV073*	C4
RV074*	C4
RV076*	B5
RV076*	C5
RV081*	F6
RV083*	C8
RV084*	C8
RV088*	E6
RV096*	C1
RV097*	C1
RV098*	F7
RV099*	E6
RV099*	F6
RV100*	D5
RV101*	C6
RV106*	D6
RV114*	C7
RV122	B8
RV134*	B8
RV135*	C8
RV136*	C6
RV140	B7
RV141*	B8
RV167*	D5
RV242*	C7
RV401*	E8
RV402*	E7
RV404*	E7
RV405*	F8
RV406*	C2
RV407*	C2
RV408*	F8
RV483*	F7
RV501*	C3
RV502*	C3
RV503*	C3
RV505*	D3
RV506*	C3
RV507*	C3
RV919*	D5
RV920*	D7
RV940	E6
RV941	E7
RV942	E6
RV943	E4
RV945*	C5
RV946*	C5
RV947*	C5
RV948	E6
RV949*	C8
RV950*	C5
RV951	D7
RW001	K1
RW002*	L2
RW003*	L2
RW004	K2
RW004*	K2
RW005	L3
RW006*	K2
RW007	L2
RW008	L2
RW009*	L2
RW010*	L2
RW011	L2
RW012*	L2
RW030*	K1
RW081*	L2
RW083*	L2
RW085	K2
RX001*	H8
RX002*	G8
RX003*	H8
RX004*	H8
RX006*	H8
RX007	I7
RX008*	J8
RX009*	E8
RX021*	H8
RX022*	H8
RX023*	H8
RX024*	H8
RX025*	J8
RX026*	J8
RX052*	F7
RX053*	F7
RX101*	D8
RX206*	I6
RX208*	I6

RX210*	H8
RX214*	J6
RX216	G8
RX217*	I6
RX350*	I8
RX351*	I8
RX352	I7
RX353*	J6
RX355*	J6
RX356*	I5
RX358*	J5
RX359*	I7
RX911*	G8
RX912	F8
RX913*	G8
RX915*	I7
RX916*	G8
RX917*	G8
RX921*	G8
RX922*	D8
RX923	C4
RX924*	C3
RX931	J7
RX953*	J6
RY001*	D2
RY002*	D1
RY003*	D1
RY004*	D1
RY006*	C1
RY008*	B1
RY009*	D1
RY010*	C1
RY012*	C1
RY916*	D2
RY917	D2
RZ005*	A6
RZ006*	A8
RZ009*	B4
RZ010*	B3
RZ011	B3
RZ015	J5
RZ019*	A6
RZ028*	B5
RZ030*	J7
RZ031	I7
RZ033*	A7
RZ034*	A7
RZ035*	A7
RZ036*	A7
RZ037*	A8
RZ038*	B3
RZ039*	C3
RZ055*	J7
RZ060*	A7
RZ070*	A6
RZ071*	A6
RZ072	B3
RZ073*	B3
RZ076*	B2

ST001	C1
ST001	E4
ST001*	C1

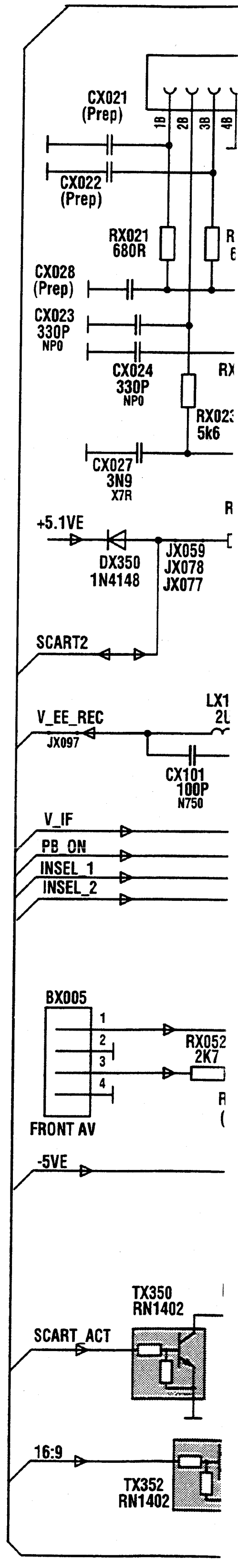
GT002	F3
GT002*	F3
GT003	D2
GT004	H1
GT005	B4
TI010*	B5
TI020*	B4
TI045*	A4
TI048*	A4
TI055*	B2
TI058*	A4
TI068*	A2
TP020	L6
TP020*	L6
TP022	L7
TP022*	L7
TP023	L6
TP023*	L7
TP026*	L7
TP071*	L5

TP082*	L3
TP086*	K3
TP095	K4
TP095*	K4
TP096	K2
TP096*	K2
TS001*	H5
TS003*	G5
TS004*	F6
TS030	F6
TS030*	F6
TT003*	F3
TT005	J4
TT005*	K4
TT006*	J2
TT013*	H1
TV001*	B5
TV002*	D4
TV003*	D5
TV004*	D5
TV005*	C6
TV008*	C8
TV009*	D5
TV009*	E7
TV010*	E6
TV012*	C7
TV013*	C6
TV014*	B7
TV016*	C8
TV018*	E6
TV019*	E6
TV020*	B7
TV044*	D6
TV070*	C5
TV401*	C2
TV402*	F7
TV501*	C3
TW001*	L2
TW002*	L3
TW003	K2
TW003	L2
TW003*	L2
TW004	K2
TW004*	K2
TW005	K2
TW005*	K1
TW006	K1
TW006*	K1
TX204*	I6
TX214*	I6
TX350*	I6
TX351*	I6
TX362*	I5
TZ001*	A6
TZ010*	B3
TZ019*	B4
TZ020*	B3
TZ031*	A7
TZ032*	A8
TZ033*	C3
TZ057*	J7

WF001	A1
WF001*	A1
WF002	J3
WF003*	B2
WF004	A1
WF004*	A1
WF203	B2
WP001	J6
WP001*	K6
WV011	C3
WV011*	C3
WV012	D7
WV012*	D7

I / O INTERFA
INTERFACE E

SCHEMATIC DIA



20669000 (I/O INTERFACE)

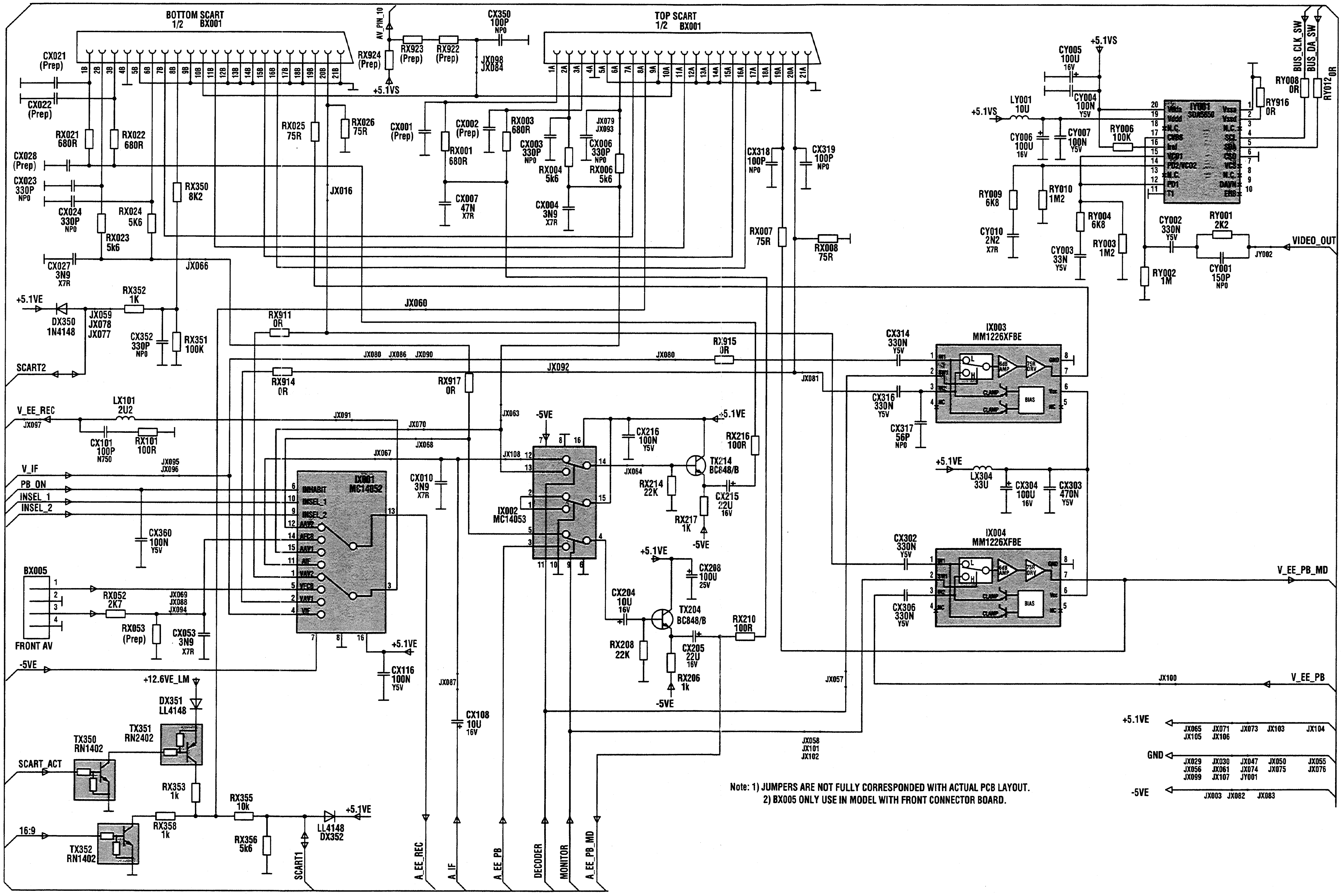
TP082*	L3
TP086*	K3
TP095	K4
TP095*	K4
TP096	K2
TP096*	K2
TS001*	H5
TS003*	G5
TS004*	F6
TS030	F6
TS030*	F6
TT003*	F3
TT005	J4
TT005*	K4
TT006*	J2
TT013*	H1
TV001*	B5
TV002*	D4
TV003*	D5
TV004*	D5
TV005*	C6
TV008*	C8
TV009*	D5
TV009*	E7
TV010*	E6
TV012*	C7
TV013*	C6
TV014*	B7
TV016*	C8
TV018*	E6
TV019*	E6
TV020*	B7
TV044*	D6
TV070*	C5
TV401*	C2
TV402*	F7
TV501*	C3
TW001*	L2
TW002*	L3
TW003	K2
TW003	L2
TW003*	L2
TW004	K2
TW004*	K2
TW005	K2
TW005*	K1
TW006	K1
TW006*	K1
TX204*	I6
TX214*	I6
TX350*	I6
TX351*	I6
TX362*	I5
TZ001*	A6
TZ010*	B3
TZ019*	B4
TZ020*	B3
TZ031*	A7
TZ032*	A8
TZ033*	C3
TZ057*	J7

●—

WF001	A1
WF001*	A1
WF002	J3
WF003*	B2
WF004	A1
WF004*	A1
WF203	B2
WP001	J6
WP001*	K6
WV011	C3
WV011*	C3
WV012	D7
WV012*	D7

I / O INTERFACE - INTERFACE ENTREE / SORTIE - INTERFACE EINGÄNGE / AUSGANG - INTERFACCIA INGRESSO / USCITA - INTERFACE ENTRADA / SALIDA

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


BOTTOM SCART 1/2 BX001
TOP SCART 1/2 BX001
AV_PIN_10
CX350 100P NPO
RX923 (Prep)
RX922 (Prep)
RX924 (Prep)
JX098 JX084
+5.1VS
CX021 (Prep)
CX022 (Prep)
RX021 680R
RX022 680R
CX028 (Prep)
CX023 330P NPO
CX024 330P NPO
RX024 5K6
RX023 5k6
RX350 8K2
CX027 3N9 X7R
JX066
JX016
RX025 75R
RX026 75R
CX001 (Prep)
CX002 (Prep)
RX001 680R
RX003 680R
CX003 330P NPO
RX004 5k6
JX079 JX093
CX006 330P NPO
RX006 5k6
CX007 47N X7R
CX004 3N9 X7R
CX318 100P NPO
CX319 100P NPO
RX007 75R
RX008 75R
+5.1VE
RX352 1K
DX350 1N4148
JX059 JX078 JX077
CX352 330P NPO
RX351 100K
SCART2
JX060
RX911 0R
JX080 JX086 JX090
RX915 0R
JX092
RX914 0R
RX917 0R
JX081
V_EE_REC
JX097
LX101 2U2
CX101 100P N750
RX101 100R
JX095 JX096
JX091
JX070
JX068
JX067
JX063
-5VE
JX108
CX216 100N Y5V
RX216 100R
TX214 BC848/B
JX064
RX214 22K
CX215 22U 16V
RX217 1K
V_IF
PB_ON
INSEL_1
INSEL_2
IX001 MC14052
INHABIT
INSEL_1
INSEL_2
AAV2
AFER
AAV1
AIF
VAV2
VFER
VAV1
VIF
CX010 3N9 X7R
IX002 MC14053
CX360 100N Y5V
BX005
FRONT AV
RX052 2K7
JX069 JX088 JX094
RX053 (Prep)
CX053 3N9 X7R
CX116 100N Y5V
JX087
CX108 10U 16V
+12.6VE_LM
DX351 LL4148
TX350 RN1402
TX351 RN2402
SCART_ACT
RX353 1k
RX355 10k
RX356 5k6
LL4148 DX352
16:9
RX358 1k
TX352 RN1402
SCART1
A_EE_REC
A_IF
A_EE_PB
DECODER
MONITOR
A_EE_PB_MD
+5.1VE
CX208 100U 25V
CX204 10U 16V
TX204 BC848/B
RX208 22K
CX205 22U 16V
RX206 1k
RX210 100R
JX057
JX058 JX101 JX102
CY005 100U 16V
CY004 100N Y5V
LY001 10U
CY006 100U 16V
CY007 100N Y5V
RY006 100K
IY001 SDA5650
Vddd
N.C.
CVBS
Iref
VCO1
PD2/VCO2
PD1
T1
Vssa
Vssd
SCL
SDA
CS0
CS1
DAVN
ERG
RY008 0R
RY916 0R
RY012 0R
BUS_CLK_SW
BUS_DA_SW
RY009 6K8
CY010 2N2 X7R
RY010 1M2
RY004 6K8
CY003 33N Y5V
RY003 1M2
RY002 1M
CY002 330N Y5V
RY001 2K2
CY001 150P NPO
JY002
VIDEO_OUT
CX314 330N Y5V
IX003 MM1226XFBE
6dB AMP
75Ω DRV
CLAMP
BIAS
GND
Vcc
CX316 330N Y5V
CX317 56P NPO
LX304 33U
CX304 100U 16V
CX303 470N Y5V
CX302 330N Y5V
IX004 MM1226XFBE
CX306 330N Y5V
V_EE_PB_MD
JX100
V_EE_PB
+5.1VE
JX065 JX071 JX073 JX103 JX104 JX105 JX106
GND
JX029 JX030 JX047 JX050 JX055 JX056 JX061 JX074 JX075 JX076 JX099 JX107 JY001
-5VE
JX003 JX082 JX083

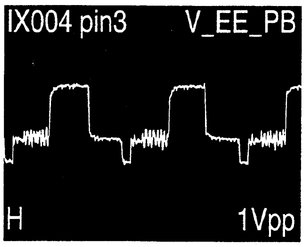
Note: 1) JUMPERS ARE NOT FULLY CORRESPONDED WITH ACTUAL PCB LAYOUT.
2) BX005 ONLY USE IN MODEL WITH FRONT CONNECTOR BOARD.

20669000 (I/O INTERFACE)

MEASUREMENTS I / O INTERFACE - MESURES INTERFACE ENTREE / SORTIE - MESSUNGEN EINGÄNGE / AUSGANG SCHNITTSTELLEN - MISURE INTERFACCIA INGRESSO / USCITA - MEDIDAS INTERFACE ENTRADA / SALIDA

INTERFACE		MODE		
LOC	**PIN**	**EE**	**PLAY**	**REC.**
IX001	1	0	0	0
	2	0	0	0
	3	1.4	1.3	1.3
	4	1.4	0.2	1.3
	5	0	0	0
	6	0	5	0
	7	-5	-5	-5
	8	0	0	0
	9	5.1	5.1	5.1
	10	5.1	5.1	5.1
	11	0	0	0
	12	0	0	0
	13	0	0	0
	14	0	0	0
	15	-0.3	-0.3	-0.3
	16	5.1	5.1	5.1
IX002	1	5.2	5.2	5.2
	2	5.2	5.2	5.2
	3	0	0	0
	4	0	0	0
	5	0	0	0
	6	0	0	0
	7	-5	-5	-5
	8	0	0	0
	9	4.3	4.3	4.4
	10	0	0	0
	11	3.9	3.9	3.9
	12	0	0	0
	13	-0.3	-0.3	-0.3
	14	-0.3	-0.3	-0.3
	15	5.2	5.2	5.2
	16	5.2	5.2	5.2
IX003	1	1.9	1.8	1.8
	2	3.9	3.9	3.9
	3	1.3	1.3	1.3
	4	NC	NC	NC
	5	NC	NC	NC
	6	5.1	5.1	5.1
	7	1.4	1.4	1.4
	8	0	0	0

INTERFACE		MODE		
LOC	**PIN**	**EE**	**PLAY**	**REC.**
IX004	1	1.4	1.4	1.4
	2	4.4	4.3	4.3
	3	1.8	1.8	1.8
	4	NC	NC	NC
	5	NC	NC	NC
	6	5.1	5.1	5.1
	7	2.3	2.4	2.3
	8	0	0	0
TX204	E	-1	-1	-1
	B	-0.3	-0.3	-0.3
	C	5.1	5.2	5.2
TX214	E	-1	-1	-1
	B	-0.3	-0.3	-0.3
	C	5.2	5.2	5.2
TX350	E	0	0	0
	B	0	5	0
	C	13.8	0	13.2
TX351	E	13.8	12.4	13.2
	B	13.8	0	13.2
	C	0	12.4	0
TX352	E	0	0	0
	B	0	0	0
	C	0	11	0



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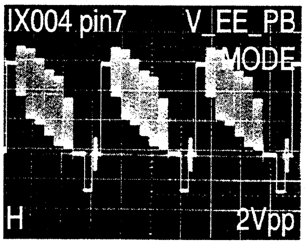

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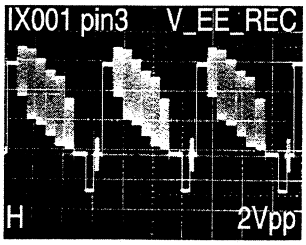


③

NOTES / NOTES / NOTIZEN / NOTA / NOTA

THOMSON CONSUMER ELECTRONICS

NORDMENDE
THOMSON TECHNOLOGY

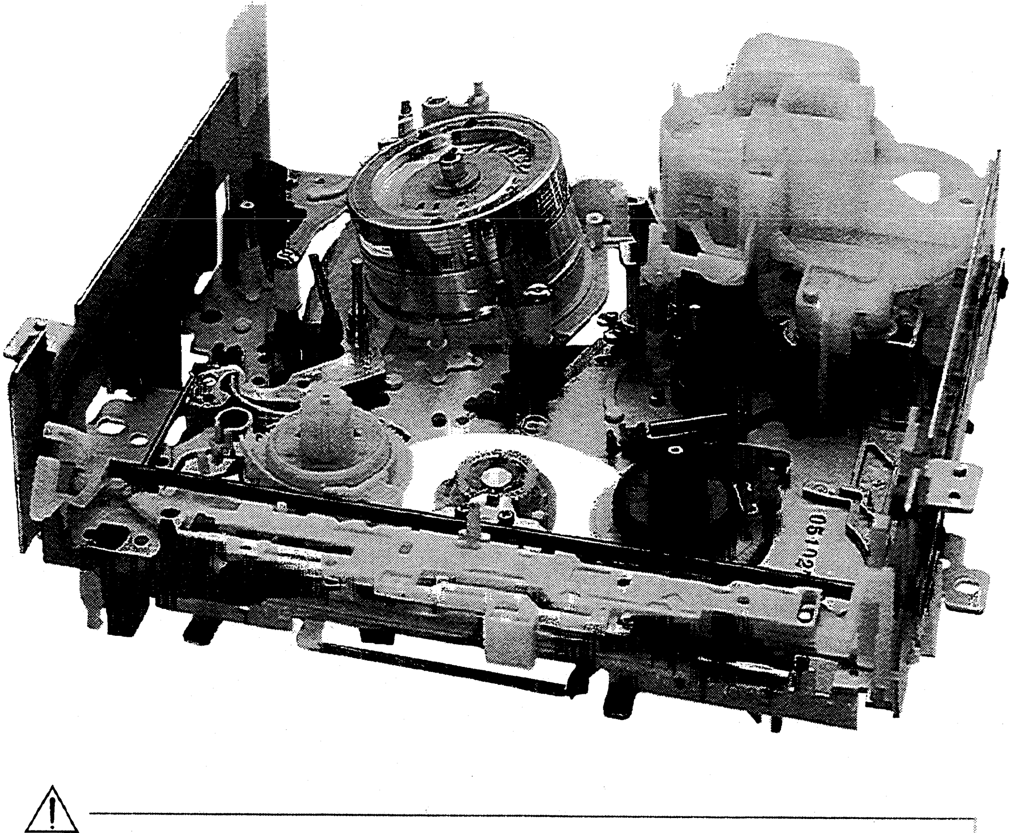
SABA **TELEFUNKEN** **THOMSON**

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R4000

Mechanical adjustment - Disassembly/Assembly
Instruction de réglages mécaniques - Démontage/Remontage
Mechanische Einstellungen - Demontage/Montage
Istruzioni per la manutenzione meccanica - Smontaggio/Rimontaggio
Ajustes mecanicos - Desmontar/Volver a montar



WARNING : *Before servicing this chassis read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Code : 102.859.90 - 1094

Geräteliste auf Seite 2 / List of sets on page 2

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Deutschland

MODELLE	*MARKE*	*KOEPFE*	*TYPE*	*KATEGORIE*
V 1140 IMC	NORDMENDE	2	PAL(MESECAM)	1
V 1242 SV		2 (LP)	PAL(MESECAM)	1
V 1440 IMC		4 (LP)	PAL(MESECAM)	1
V 1444 SV		4 (LP)	PAL(MESECAM)	1
V 3445 SV		4 + 2 (LP)	PAL(MESECAM)	2
V 4404 SENSAR		4 + 2 (LP)	PAL / NTSC	2
V 4445 SV		4 + 2 + 1 (LP)	PAL / NTSC	2
VR 5020	SABA	2	PAL(MESECAM)	1
VR 5021		2		1
VR 5025		2		1
VR 5035		3		1
VR 5040		4		1
VR 5045		4		1
M 9415	TELEFUNKEN	2	PAL(MESECAM)	1
M 9420		2	PAL(MESECAM)	1
M 9423		2	PAL(MESECAM)	1
M 9425		2 (LP)	PAL(MESECAM)	1
M 9430		3	PAL(MESECAM)	1
M 9443		4	PAL(MESECAM)/SECAM	1
M 9445		4 (LP)	PAL(MESECAM)	1
M 9460		4 + 2 (LP)	PAL(MESECAM)	2
M 9470		4 + 2 (LP)	PAL(MESECAM)/SECAM	2

Export

MODELLE	*MARKE*	*KOEPFE*	*TYPE*	*KATEGORIE*
V 1140 IMC	NORDMENDE	2	PAL(MESECAM)	1
V 1242 SV		2 (LP)	PAL(MESECAM)	1
V 1440 IMC		4 (LP)	PAL(MESECAM)	1
V 1444 SV		4 (LP)	PAL(MESECAM)	1
V 3445 SV		4 + 2 (LP)	PAL(MESECAM)	2
V 4445 SV		4 + 2 + 1 (LP)	PAL / NTSC	2
VR 5020	SABA	2	PAL(MESECAM)	1
VR 5025		2	PAL(MESECAM)	1
VR 5035		3	PAL(MESECAM)	1
VR 5040		4	PAL(MESECAM)	1
M 9420	TELEFUNKEN	2	PAL(MESECAM)	1
M 9425		2 (LP)	PAL(MESECAM)	1
M 9430		3	PAL(MESECAM)	1
M 9443		4	PAL(MESECAM)/SECAM	1
M 9445		4 (LP)	PAL(MESECAM)	1
M 9460		4 + 2 (LP)	PAL(MESECAM)	2
M 9470		4 + 2 (LP)	PAL(MESECAM)/SECAM	2
V 1400	THOMSON	2	PAL(MESECAM)/SECAM	1
VP 2400		2	PAL(MESECAM)/SECAM	1
VP 4480		4 (LP)	PAL(MESECAM)/SECAM	1
VPH 6400		4 + 2	PAL(MESECAM)/SECAM	2
VPH 6480		4 + 2 (LP)	PAL(MESECAM)/SECAM	2
VPH 6490		4 + 2	PAL / SECAM / NTSC	2

INHALT
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I - ALLGEMEINES

Dieses Laufwerk entspricht dem VHS-Standard und wird mit 3 Motoren betrieben:
Kopftrommel-, Capstan- (Direktantrieb) und Funktionssteuermotor (zum Antrieb der Wickelteller und der Funktionssteuernocke). Das neue Laufwerk zeichnet sich durch einen Kopftrommelmotor aus, dessen Stator auf der Hauptplatine integriert ist.

II - BESCHREIBUNG DES LAUFWERKS

Liste der wichtigsten Teile:

Abb. 1:
1 - Andruckrolle
2 - Bandführung
6 - Ton- / Kontrollkopf
10 - Trommelantriebseinheit
11 - Löschkopf
13 - Antistatikbürste
Abb. 2:
15 - Bewegliche Bandführung
20 - Funktionsteuermotor
22 - Steuernocke
28 - Antriebsrollenachse
29 - Wickelteller-Antriebsriemen
33 - Zwischenrolleneinheit
42 - Aufnahmesperre
43 - Abwickelteller
44 - Aufwickelteller
47 - Bandzugarm

I - GENERAL

This mechanism complies fully with the VHS standard. It comprises of three motors; drum and capstan, which are both direct drive and a function control driving the function cam mechanism. This mechanism can be identified by the construction of the drum motor, the stator winding are attached to the main board.

II - INTRODUCTION TO THE MECHANISM

List of the main parts :

Fig. 1 :
1 - Pinch roller assembly
2 - Tape guide
6 - Audio / CTL Head
10 - Drum motor assembly
11 - Full Erase head
13 - Anti-static brush
Fig. 2 :
15 - Mobile tape guide
20 - Function control motor
22 - Drive cam
28 - Capstan motor
29 - Reel drive belt
33 - Intermediate pulley
42 - Recording safety lock
43 - Supply reel hub
44 - Take-up reel hub
47 - Tape back tension arm

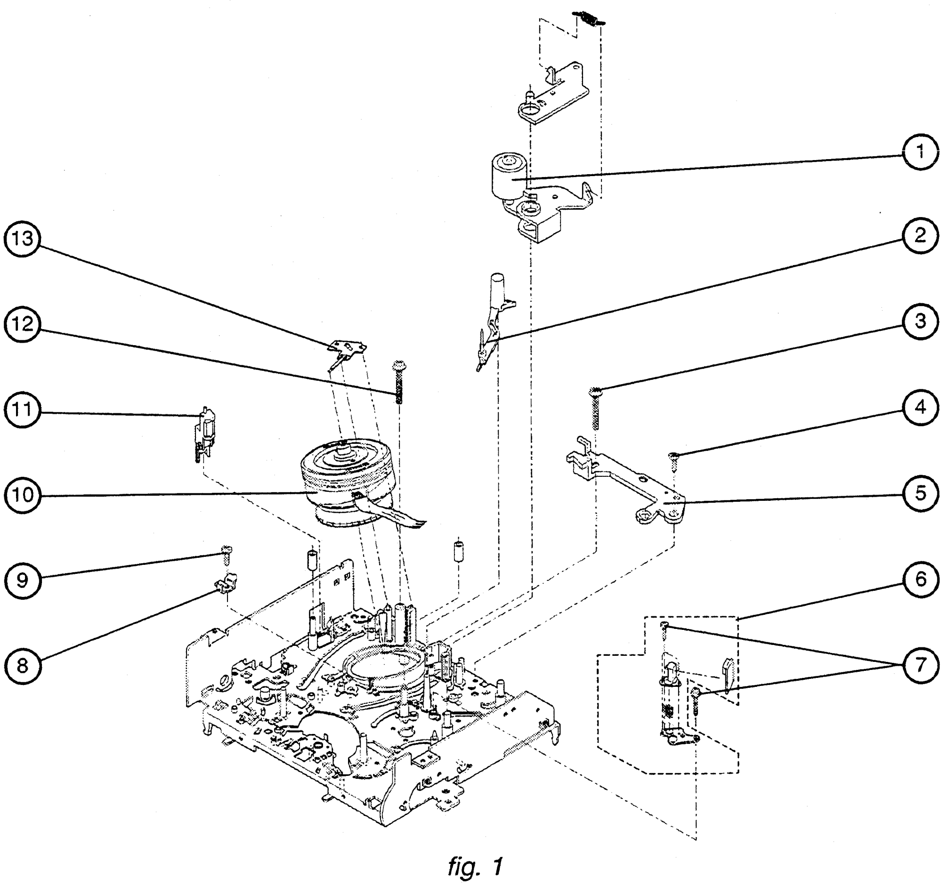


fig. 1

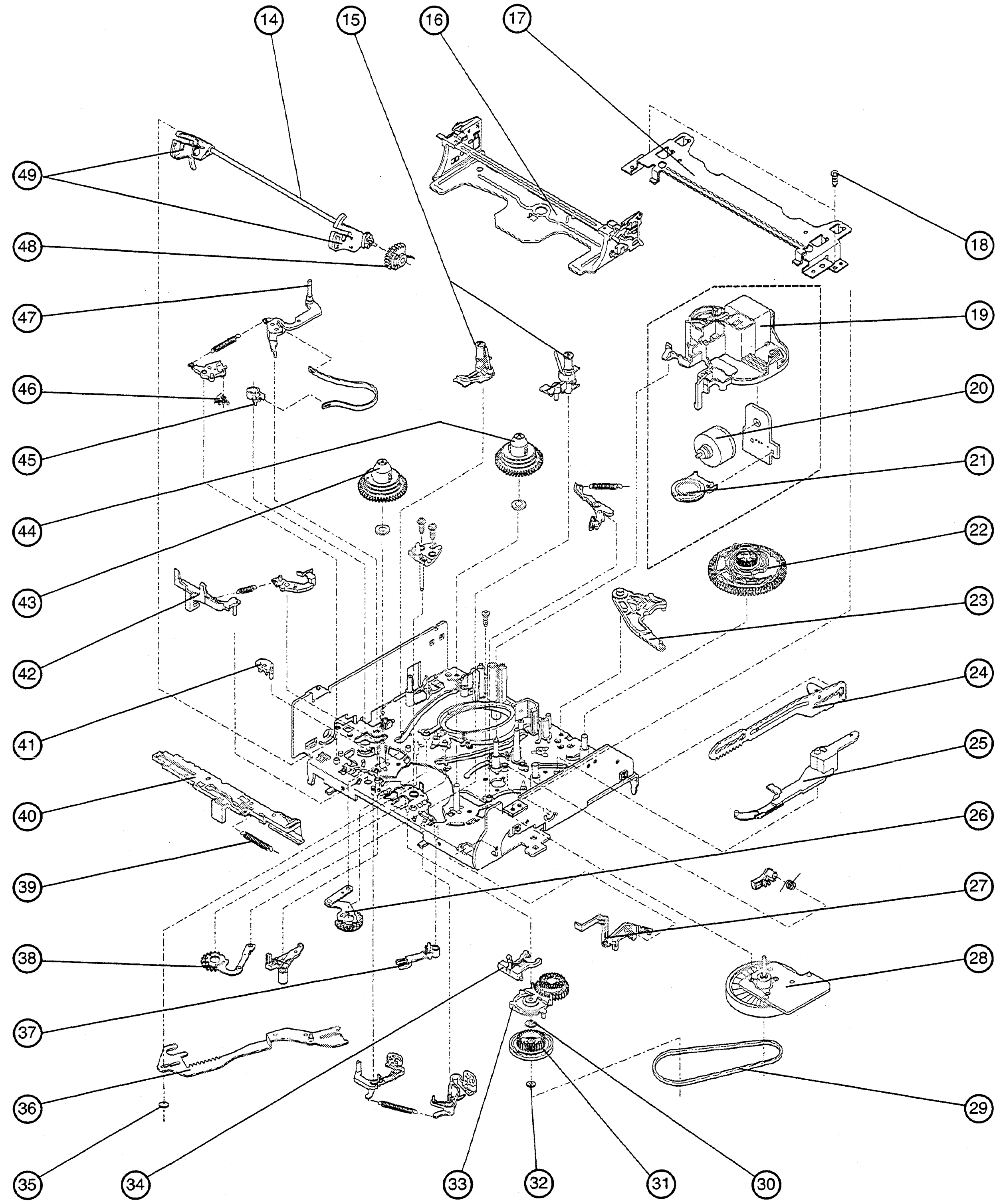


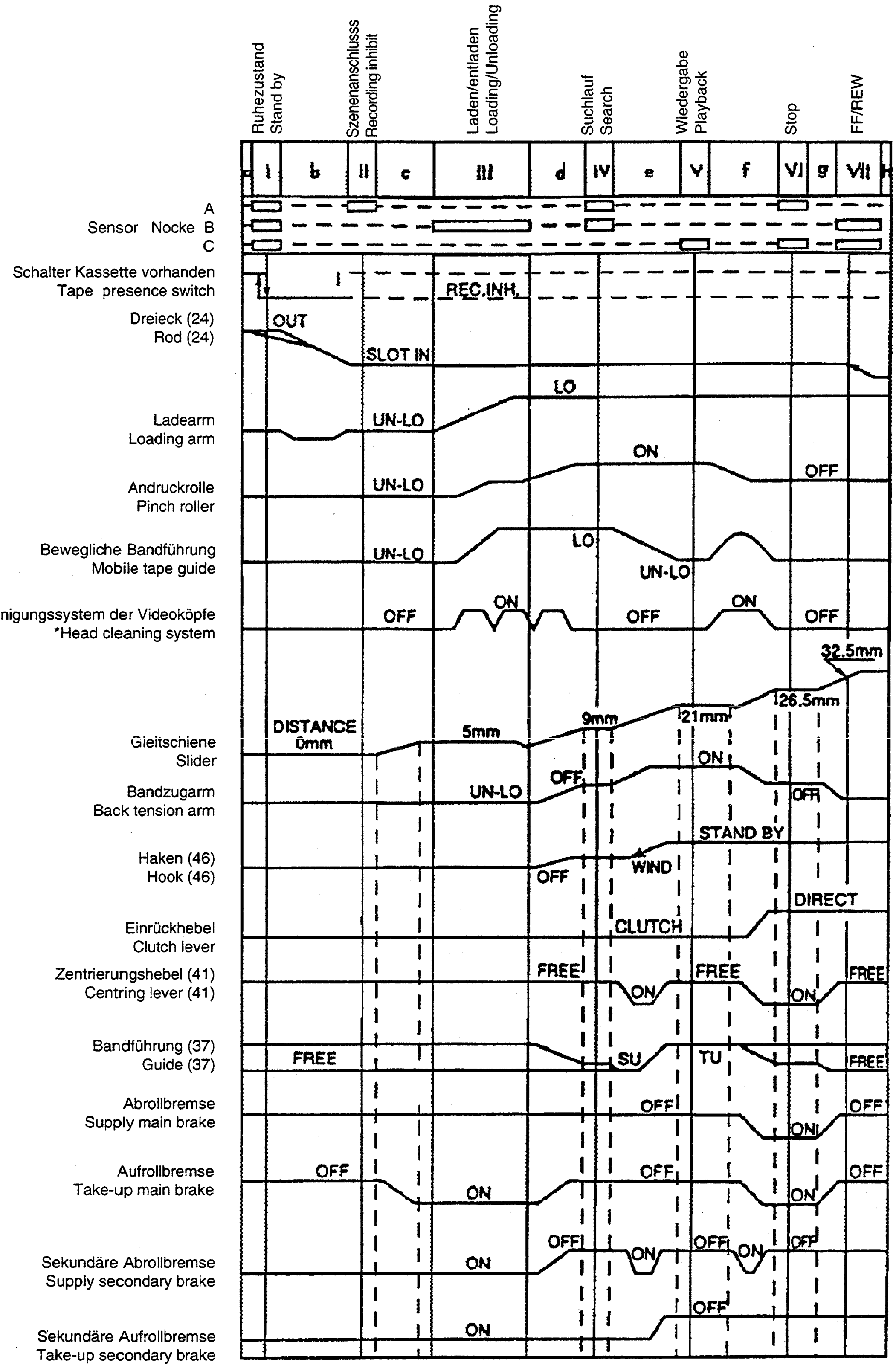
fig. 2

III - FUNKTIONSBESCHREIBUNG

III - DESCRIPTION OF THE OPERATION

1 - KONTROLLE DER FUNKTIONSABLÄUFE

1 - CHECKING FUNCTION SEQUENCE


Ruhezustand
Stand by
Szenenanschlusss
Recording inhibit
Laden/entladen
Loading/Unloading
Suchlauf
Search
Wiedergabe
Playback
Stop
FF/REW
a
I
b
II
c
III
d
IV
e
V
f
VI
g
VII
h
A
Sensor Nocke B
C
Schalter Kassette vorhanden
Tape presence switch
REC.INH.
Dreieck (24)
Rod (24)
OUT
SLOT IN
Ladearm
Loading arm
UN-LO
LO
Andruckrolle
Pinch roller
UN-LO
ON
OFF
Bewegliche Bandführung
Mobile tape guide
UN-LO
LO
UN-LO
*Reinigungssystem der Videoköpfe
*Head cleaning system
OFF
ON
OFF
ON
OFF
Gleitschiene
Slider
DISTANCE
0mm
5mm
9mm
21mm
26.5mm
32.5mm
Bandzugarm
Back tension arm
UN-LO
OFF
ON
OFF
Haken (46)
Hook (46)
OFF
WIND
STAND BY
Einrückhebel
Clutch lever
CLUTCH
DIRECT
Zentrierungshebel (41)
Centring lever (41)
FREE
ON
FREE
ON
FREE
Bandführung (37)
Guide (37)
FREE
SU
TU
FREE
Abrollbremse
Supply main brake
OFF
ON
OFF
Aufrollbremse
Take-up main brake
OFF
ON
OFF
ON
OFF
Sekundäre Abrollbremse
Supply secondary brake
ON
OFF
ON
OFF
ON
OFF
Sekundäre Aufrollbremse
Take-up secondary brake
ON
OFF

*- If fitted

IV- WARTUNG DES LAUFWERKS

⚠Module nicht bei eingeschaltetem Gerät entfernen ! Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

1 - ZUGANG ZUM LAUFWERK

1) ABNEHMEN DES GEHÄUSES *(Abb. 3)*

- 3 Schrauben an der Rückseite des Gehäuses und, falls vorhanden, die zwei seitlichen Schrauben entfernen.
- Das Gehäuseoberteil leicht nach hinten ziehen und abheben.
- Die zwei Schrauben, mit denen die Frontblende befestigt ist, links und rechts am Kassettenschacht entfernen.
- 6 Clips (4 an der Oberseite und 2 an der Unterseite) anheben und die Frontblende abnehmen
- Die 2 Schrauben (S1), mit denen das Netzteil befestigt ist, entfernen. Das Netzteil herausnehmen.
- Verbindungsleitungen zur Frontplatine lösen.
- Die 6 Clips (I1), die die Hauptplatine halten, lösen und die Einheit Laufwerk/Platine herausheben.

2) AUSBAUEN DES LAUFWERKS *(Abb. 3, 4)*

- Verbindungsleitungen zu Funktionskontroll- und Kopftrommel-Motor sowie zum Ton-/ Kontrollkopf lösen.
- Schraube (S2) und Antriebsriemen vom Capstanmotor (29) entfernen.
- Schraube (12) an der Antistatikbürste entfernen.
- Schraube (9) und Metallstück (8) entfernen.
- Die 4 Halteclips (I2) lösen und die Laufwerkseinheit anheben; dabei auf die Anschlüsse des Löschkopfs und des Capstanmotors achten.

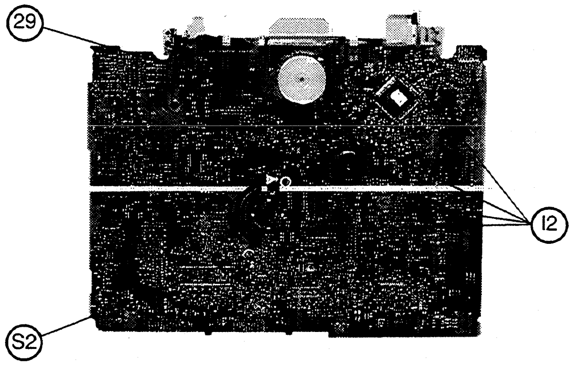


fig. 4

3) AUSBAUEN UND WIEDEREINBAUEN DER KASSETTENHALTERUNG *(Abb. 3 bis 5b)*

AUSBAUEN: *(Abb. 3 und 4)*
- 2 Schrauben links und rechts am Kassettenschacht lösen.
- Den oberen Teil des Kassettenschachtes abheben.
- Den Kassettenhalter bis zum vorderen Anschlag zurückziehen.
- Die zur Kopftrommel zeigende Seite des Kassettenhalters leicht anheben.
- Die weißen Hebel links und rechts am Kassettenhalter entriegeln und den Kassettenhalter in Richtung Kopftrommel schieben, bis die hinteren Führungszapfen aus ihrer Führung genommen werden können
- Jetzt den Kassettenhalter wieder in die entgegengesetzte Richtung ziehen, bis auch die vorderen Führungszapfen aus der Führung genommen werden können.

IV- MECHANISM MAINTENANCE

⚠ Do not disconnect modules when they are energized! Repairs on power supply section are to be carried out only with isolating transformer.

1 - ACCESS TO MECHANISM

1) REMOVAL OF THE CHASSIS *(fig. 3)*

- Remove 3 screws at the rear of the cover and the two side screws.
- Pull the cover slightly backwards and lift it off.
- Remove 2 screws and release 6 clips (4 on the top and 2 on the bottom) securing the front panel.
- Remove 2 screws (S1) securing the power supply unit.
- Carefully remove the power supply unit.
- Unclip the front panel.
- Release 6 clips (I1) securing the main board and lift the mechanism/board assembly out.

2) REMOVAL OF THE MECHANISM *(fig. 3 and 4)*

- Disconnect the function control and drum motors and the audio control head leads.
- Remove screw (S2) and the capstan motor belt (29).
- Remove screw (12) securing the anti-static brush.
- Remove screw (9) and the metal part (8).
- Release the 4 securing clips (I2) and lift the assembly paying attention to the connectors of the full erase head and of the capstan motor.

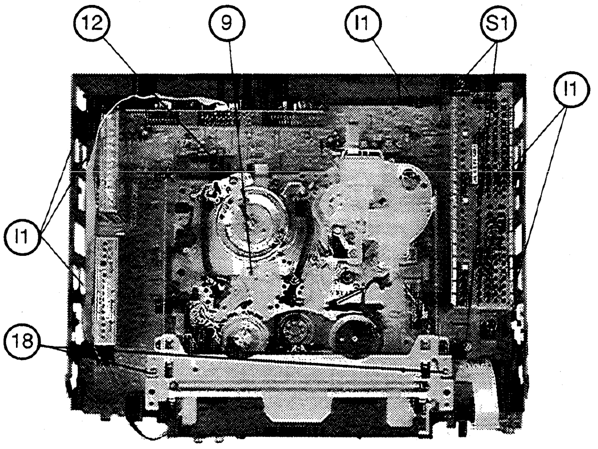


fig. 3

3) REMOVAL AND REFITTING OF THE CASSETTE HOLDER *(fig. 3 to 5b)*

REMOVAL: *(fig. 3 and 4)*
- Take out two screws at the left and the right side of the upper part of the cassette holder.
- Remove the upper part of the cassette holder.
- Pull the remaining part to the upper end position. (Eject position)
- Lift the cassette holder at the side, which shows to the drum
- Release the white levers (left and right of the casstte holder) and push the cassette holder towards the drum until the guide pins at the rear side come out of the guide rails.
- Now pull the cassette holder in the opposite direction until the guide pins at the front side also come out of the guide rails.

WIEDEREINBAUEN:*(Abb. 5a, 5b, 5c und 7)*
- Die vorderen Ansätze des Kassettenträgers wie in Abb. 5a dargestellt einsetzen.
- Die hinteren Ansätze (P1) des Kassettenträgers in Richtung des Trommelmotors kippen.
- Die Hebel (P2) nach oben halten und dabei leicht den Kassettenträgers nach hinten drücken, um so die Ansätze (P3) in die Gleitschienen einzusetzen.
- Den Hebel der Kassettenträgerklappe (27) einsetzen, Abb. 7.
- Die Hebel (P2) wie in Abb.5b dargestellt positioneren, bevor der obere Teil wieder aufgesetzt wird (Abb.5c).

REFITTING:*(fig. 5a , 5b,5c and 7)*
- Move the pins at the front of the cassette holder as shown in figure 5a.
- Move the pins at the back of the cassette holder towards the drum motor.
- Whilst holding the levers , gently push the cassette holder back, so that the back pins go into runners .
- Position the lever of the cassette holder door as shown in figure 7.
- Position the levers as shown in figure 5b before fitting the top unit (figure 5c).

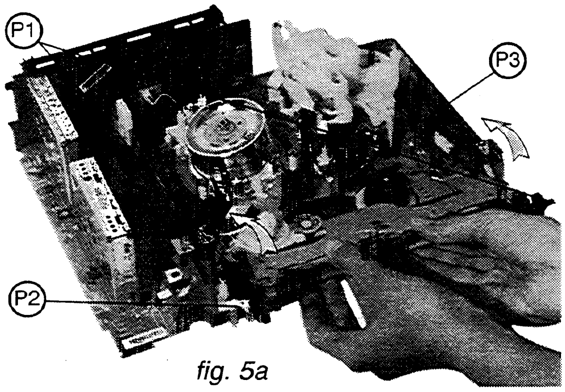


fig. 5a

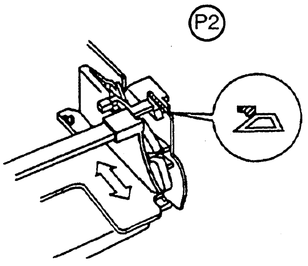


fig. 5b

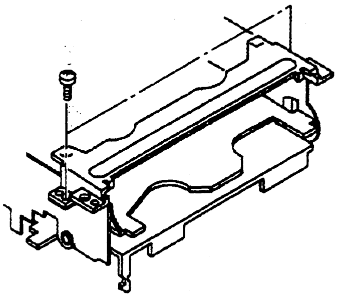


fig. 5c

2 - AUSTAUSCHEN DER WICHTIGSTEN LAUFWERKTEILE

1) AUSTAUSCH DER TROMMELANTRIEBSEINHEIT:
(Abb. 6)

AUSBAUEN:
- Um die Trommelantriebseinheit auszubauen, ist es nicht nötig, das Laufwerk herauszunehmen.
- Den Trommelantrieb abtrennen.
- Schraube (12) und Antistatikbürste entfernen.
- Die Schrauben (3), (4) und (9) sowie die Metallteile entfernen.
- Das Reinigungssystem der Videoköpfe ausbauen.
- Die Trommelantriebseinheit herausnehmen.

WIEDEREINBAUEN:
- In umgekehrter Reihenfolge zum Ausbau vorgehen und dabei vor dem Befestigen von Teil (5) die Trommel leicht gegen den Abwickelteller drücken.
- Den Bandlauf überprüfen.

2 - REPLACEMENT OF THE MAIN PARTS ON THE MECHANISM.

1) REPLACEMENT OF THE DRUM MOTOR:
(fig. 6)

REMOVAL:
- It is not necessary to remove the mechanism, in order to remove the drum motor.
- Disconnect the drum motor.
- Remove screw (12) and the anti-static brush.
- Remove screws (3), (4) and (9) and metal parts.
- Remove video head cleaning system.
- Remove the drum motor.

REFITTING:
- Perform removal operations in reverse order by pushing the drum slightly towards the supply reel before securing the part (5).
- Check the tape path.

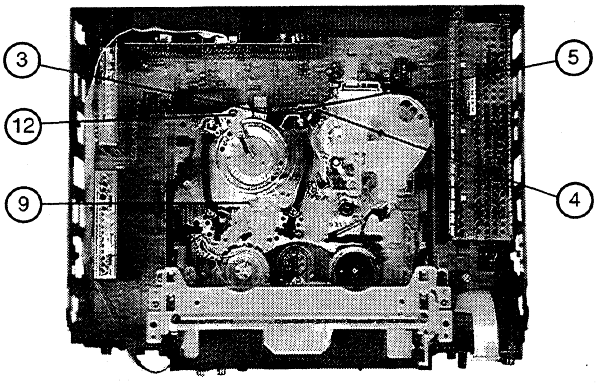


fig. 6

2) AUSTAUSCH DES BANDZUGARMS:
(Abb. 7 und 8)

AUSBAUEN:
- Den Clip (I3) öffnen und den gezahnten Hebel (48) herausziehen.
- Den Hebel (27) entfernen.
- Die Antriebsachse (14) der Kassettenhalterung nach rechts schieben, um sie aus ihrem Sitz zu nehmen.
- Die Achse erst links, dann rechts anheben.
- Die Feder (39) lösen.
- Den Clip (I4) lösen und den Bandzugarm und die Bremse anheben.
- Den Clip (I5) öffnen, um die Befestigung (45) der Bandzugbremse zu lösen.

2) REPLACEMENT OF THE TAPE BACK TENSION ARM
(fig. 7 and 8)

REMOVAL:
- Release clip (I3) and remove the toothed lever (48).
- Remove lever (27).
- Slide the cassette holder pin (14) to the right in order to release it from its housing.
- Lift the pin from the left and then from the right.
- Remove spring (39).
- Release clip (I4) and lift the tape back tension arm and brake.
- Release clip (I5) in order to free the attachment (45) of the tape back tension brake.

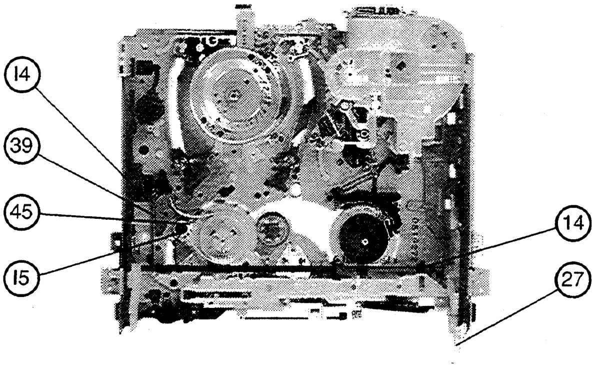


fig. 7

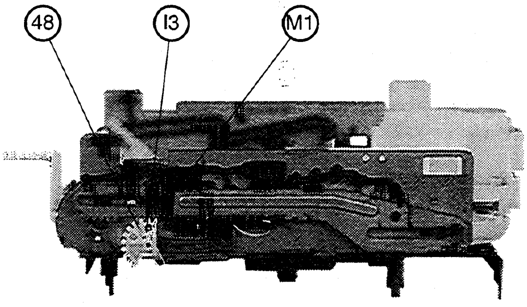


fig. 8

WIEDEREINBAUEN:
- Die Befestigung (45) der Bandzugbremse anbringen.
- Die Bremse um den Abwickelteller legen.
- Den Bandzugarm einsetzen und andrücken, um ihn festzuklemmen.
- Die Feder (39) wieder anbringen.
- Die Achse (14) in ihren Sitz einsetzen.
- Den gezahnten Hebel (48) einsetzen und dabei den ersten Zahn mit dem Kennzeichen (M1) ausrichten.
- Nach dem Austausch des Bandzugarms muß dessen Position gemäß der Angaben auf Seite 13 neu eingestellt werden.

REFITTING:
- Fit attachment (45) of the tape back tension brake.
- Wind the brake around the supply reel.
- Insert the tape tension arm and press to clip in to position.
- Refit spring (39).
- Refit pin (14) in its housing.
- Fit the toothed part (48) by aligning the first tooth with the marking (M1).
- After replacing the tape back tension arm, its position must be re-set as shown in page 13.

3) AUSTAUSCH VON TON-UND KONTROLLKOPF:
(Abb.9)

AUSBAUEN:
- Den Stecker (C1) herausziehen.
- Die 2 Schrauben (7) entfernen und dann die Kontrollkopfeinheit anheben.

3) REPLACEMENT OF THE AUDIO-CONTROL HEAD.
(fig. 9)

REMOVAL:
- Disconnect connector (C1).
- Remove 2 screws (7) and lift the audio-control head.

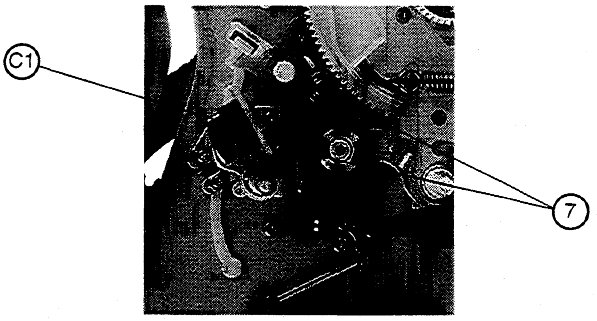


fig. 9

WIEDEREINBAUEN:

- In umgekehrter Reihenfolge zum Ausbau vorgehen.
- Folgende Einstellungen vornehmen: Azimut, Höhe, Neigungswinkel und Kompatibilität (siehe Seite 15, Abschnitt B).

4) AUSTAUSCHEN DES FUNKTIONSKONTROLLMOTORS:

(Abb. 10 und 11)

AUSBAUEN:

- Das Reinigungssystem der Videoköpfe ausbauen.
- In der angegebenen Reihenfolge die 4 Clips (I6), (I7), (I8) und (I9) lösen. Dann die Einheit Gehäuse /Funktionskontrollmotor anheben.
- Das Teil (P4) nach vorherigem Öffnen des entsprechenden Clips anheben.
- Das Getriebe (P5) herausnehmen.
- Das Ende der Gewindestange (P6) leicht anheben.
- Den Clip (I10) des Funktionsschalters lösen.
- Die Einheit Motor/Schalter aus der Gleitschiene (P7) nehmen.
- Den Motor ablöten.

WIEDEREINBAUEN:

- Darauf achten, daß das Loch (H1) der Nocke über dem des Gehäuses liegt.
- In umgekehrter Reihenfolge zum Ausbau vorgehen, ohne dabei zu vergessen, die Gewindestange in ihre Clips einzusetzen und darauf zu achten, daß die Kennzeichen (M2) des Funktionsschalters und (M3) des Gehäuses übereinstimmen.

REFITTING:

- Perform the removal operations in reverse order.
- Adjust the azimuth, height, inclination and check compatibility (see page 15 section B).

4) REPLACEMENT OF THE FUNCTION CONTROL MOTOR:

(fig. 10 and 11)

REMOVAL:

- Remove the video head cleaning system.
- Release, in this order, 4 clips (I6), (I7), (I8) and (I9) securing the casing and function control motor assembly and lift it.
- Lift part (P4) after releasing its clip.
- Remove gear (P5).
- Slightly lift the end of the worm screw (P6).
- Release clip (I10) of the function switch.
- Remove the motor/switch assembly from the slide rail (P7).
- Unsolder the motor connections.

REFITTING:

- Check that hole (H1) on the cam is exactly over the hole on the chassis.
- Perform removal operations in reverse order remembering to insert the worm screw in its clips and making sure that the markings (M2) on the function switch correspond to the markings (M3) on the casing.

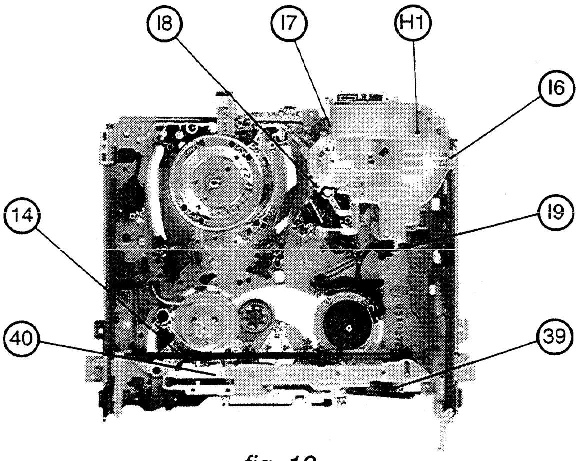


fig. 10

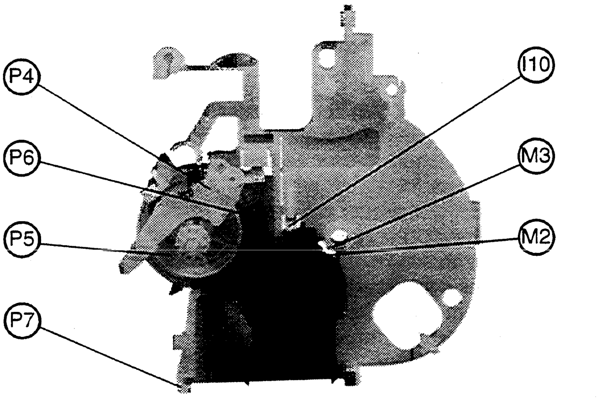


fig. 11

5) AUSTAUSCH DER FUNKTIONSSTEUERNOCKE:

(Abb. 10, 12, 13 und 14)

AUSBAU:

- Die Einheit Gehäuse/Funktionskontrollmotor gemäß den Angaben des vorherigen Kapitels ausbauen.
- Die Antriebsachse (14) der Kassettenhalterung ausbauen.
- Die Feder (39) und die Gleitschiene (40) entfernen.
- Die Andruckrolle (1) und den Hebel (25) entfernen.
- Die Nocke herausnehmen.

5) REPLACEMENT OF THE CONTROL CAM:

(fig. 10, 12, 13 and 14)

REMOVAL:

- Remove the casing and function control motor assembly as discribed in the previous section 4.
- Remove cassette holder drive pin (14) .
- Remove spring (39) and the slide rail (40).
- Remove pinch roller (1) and the lever (25).
- Remove the cam.

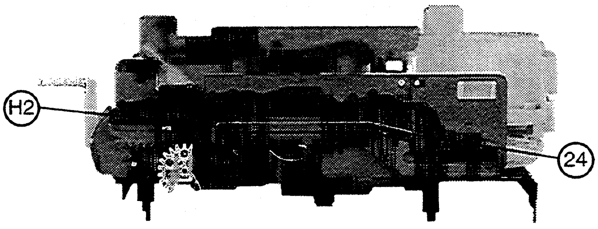


fig. 12

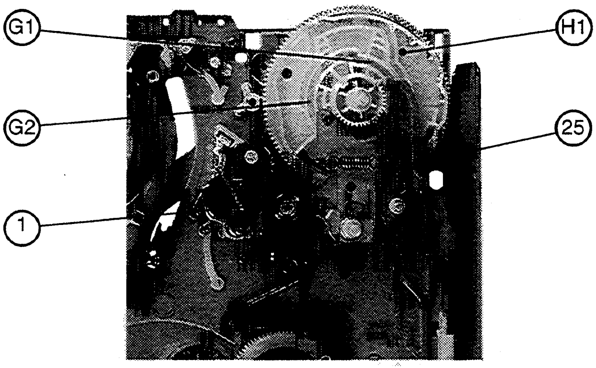


fig. 13

WIEDEREINBAUEN:
- Die beweglichen Bandführungen und den Bandzugarm am Anschlag "Ausgabe" festhalten.
- Den Hebel (23) montieren und dabei sorgfältig seinen Zapfen in das Loch des Dreiecks (24) einführen.
- Das Dreieck (24) so positionieren, daß das Loch (H2) über dem des Gehäuses liegt.
- Die Nocke so positionieren, daß das Loch (H1) über dem des Gehäuses liegt.
- Den Hebel (25) einsetzen und dabei seinen Zapfen in die Auskehlung (G1) einführen.
- Die Andruckrolle unter Einführen des Zapfens in die Auskehlung (G2) anbringen und dann die Einheit Gehäuse/ Funktionskontrollmotor einsetzen. Dabei ist darauf zu achten, daß das Kennzeichen auf dem Schalter dem des Gehäuses gegenüberliegt.
- Die Gleitschiene (40) einsetzen und die Feder (39) wieder anbringen.

6) AUSTAUSCH DER LADEARME:
(Abb. 15 und 16)

AUSBAU:
- Den Clip (35) entfernen und den Antriebshebel (36) der Ladearme abnehmen.
- Die Ladearme anheben.

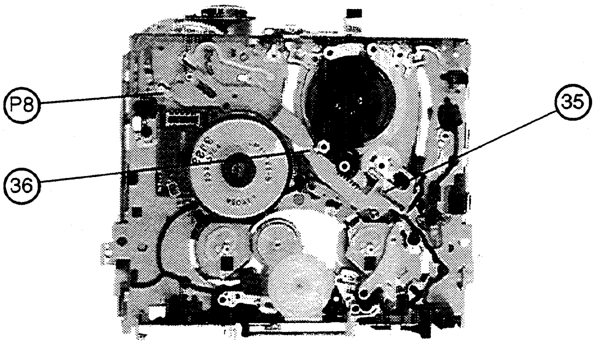


fig. 15

WIEDEREINBAU:
- Die beweglichen Bandführungen am Anschlag "Ausgabe" festhalten.
- Erst den Aufroll- dann den Abroll-Ladearm einbauen, und zwar so, daß sich die Kennzeichen (M4) und (M5) gegenüberliegen.
- Das Ende des Hebels (36) soweit in die Gleitschiene (P8) schieben, bis sich das Kennzeichen (M6) und der erste Zahn des Aufrollgetriebes einander gegenüberliegen.
- Den Clip wieder anbringen.

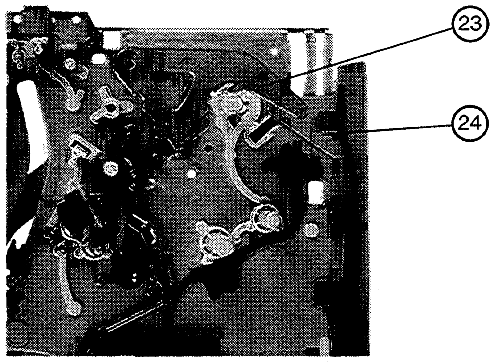


fig. 14

REFITTING
- Hold the mobile guide rails and the tape back tension arm against the unloading stop.
- Fit lever (23) making sure that the nipple is fitted inside the hole on the rod (24).
- Position the rod (24) so that hole (H2) is exactly over the hole on the chassis.
- Position the cam so that hole (H1) is exactly over the hole on the chassis.
- Fit lever (25) by inserting its nipple in the groove (G1).
- Fit the pinch roller by inserting its nipple in the groove (G2) and then fit the casing and function control motor assembly, making sure that the marking on the switch is opposite the marking on the casing.
- Fit slide rail (40) and spring (39).

6) REPLACEMENT OF THE TAPE LOADING ARMS
(fig. 15 and 16)

REMOVAL:
- Remove clip (35) and remove the tape loading arm drive lever (36).
- Remove the take-up and supply insertion arms.
- Remove mobile tape guides .

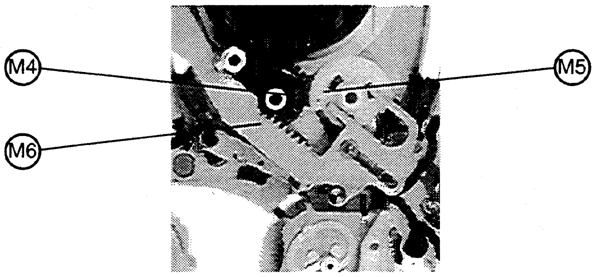


fig. 16

REFITTING:
- Fit the mobile tape guides and hold against the play position on the main deck.
- Fit the take-up guide insertion arm followed by the supply guide insertion arm making sure that the alignment holes (M4) and (M5) are facing each other.
- Insert the end of the lever (36) in the slide rail (P8) and then slide it until the marking (M6) is facing the first tooth of the take-up gear.
- Refit the clip.

7) AUSTAUSCHEN DES ZWISCHENGETRIEBES:
(Abb. 17, 18 und 19)

AUSBAUEN:
- Die Gleitschiene (40) ausbauen.
- Den Clip (32) und das Getriebe (31) entfernen.
- Den Clip (I11) lösen und die Führung (37) herausnehmen.
- Den Clip (30) entfernen und das Zwischengetriebe (33) anheben.

7) REPLACEMENT OF THE INTERMEDIATE PULLEY:
(fig. 17, 18 and 19)

REMOVAL:
- Remove slide rail (40).
- Remove clip (32) and gear (31).
- Release clip (I11) and remove guide (37).
- Release clip (30) and lift the intermediate pulley (33) off.

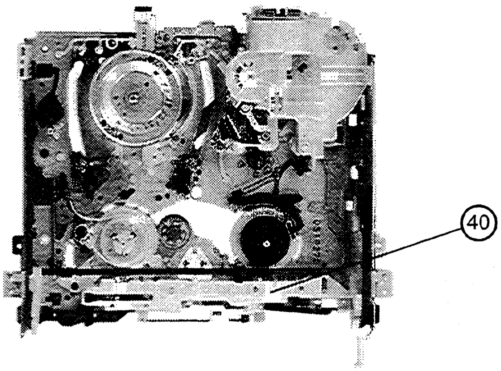


fig. 17

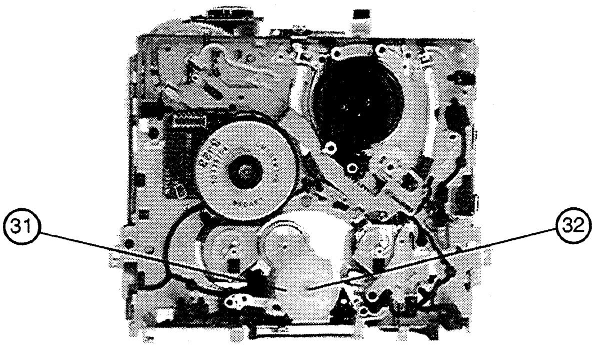


fig. 18

WIEDEREINBAUEN:
- Den Einrückhebel (34) in die Auskehlung des Zwischengetriebes einführen und dann dieses auf seiner Achse positionieren.
- In umgekehrter Reihenfolge zum Ausbau vorgehen.

REFITTING :
- Insert the clutch tab (34) in the groove of the intermediate pulley and fit the latter on its spindle.
- Perform the removal operations in reverse order for the other parts.

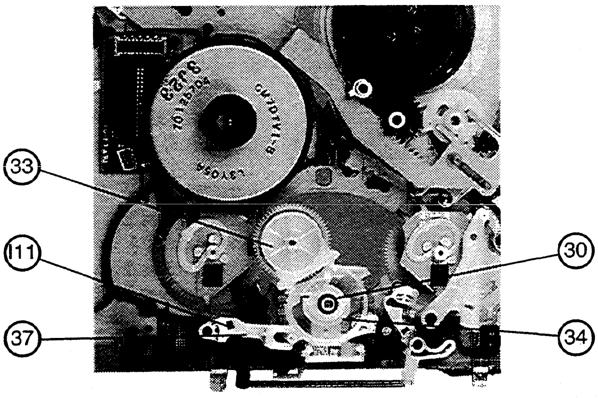


fig. 19

V - MECHANISCHE EINSTELLUNGEN UND KONTROLLEN

ERFORDERLICHES MATERIAL:

- Bandzug-Meß-Kassette.
- Kassette MH4.
- Zweistrahloszilloskop mit Bandbreite >10 MHz.
- Fernsehgerät oder Farbmonitor.

1 - EMPFEHLUNGEN DES HERSTELLERS:

- Nach allen Eingriffen an einem Laufwerk ist es ratsam, die Reinigungs-, Überprüfungs und Einstellarbeiten des Bandlaufs vorzunehmen.

V - ADJUSTMENTS AND MECHANICAL CHECKS

EQUIPMENT REQUIRED:

- Torque measurement cassette .
- MH4 tape.
- One dual-trace oscilloscope, pass band > 10 MHz.
- One colour television set or monitor.

1 - MANUFACTURER RECOMMENDATIONS:

- Before any work is carried out on the mechanism, the tape path should be cleaned, checked and adjusted.
- Check that the mobile tape guides rotate freely.

- Stellen Sie sicher, daß sich die beweglichen Bandführungen frei drehen.
- Nach dem Einlegen der Kassette prüfen, ob sich die beweglichen Bandführungen in ihren Endpositionen befinden.
- Prüfen, ob die Capstanachse und die Andruckrolle parallel zueinander stehen.
- Mit einem Tupfer alle Partien reinigen, die sich in direktem Kontakt zum Band befinden.
- Zur Reinigung der Kopftrommel, der Videoköpfe und des Drehtransformators wird empfohlen, Baumwollhandschuhe zu tragen, um Fettablagerungen auf den Flächen zu verhindern, die mit dem Band in Berührung kommen.

- After insertion, check that the mobile tape guides are correctly positioned in their stops.
- Check that the capstan shaft and the pinch roller are parallel.
- Using a pad, clean all the parts directly in contact with the tape.
- To clean the video head drum , it is recommended to wear cotton gloves and use a pad so that there are no grease marks left on the surfaces in contact with the tape.

2 - EINSTELLEN DER BANDZUGBREMSE:

(Abb. 20)

- Die Kassettenhalterung ausbauen.
- Den Videorecorder auf Wiedergabe schalten.
- Mit einem Schraubendreher die Schraube (S3) soweit festdrehen, bis sich der BANDZUG-Fühlhebel 7,5 ± 1mm vom Gehäuserand entfernt befindet (durch den langen Strich (M7) gekennzeichnet).
- Den Bandzug wie nachstehend angegeben überprüfen.

2 - TAPE BACK TENSION BRAKE ADJUSTMENT

(fig. 20)

- Remove the cassette holder.
- Set mechanism in playback mode.
- Using a screwdriver turn screw (S3) so that the arm tension pin is 7.5 ± 1 mm from the edge of the chassis (marked by the long line (M7)).
- Check the tape tension as shown below.

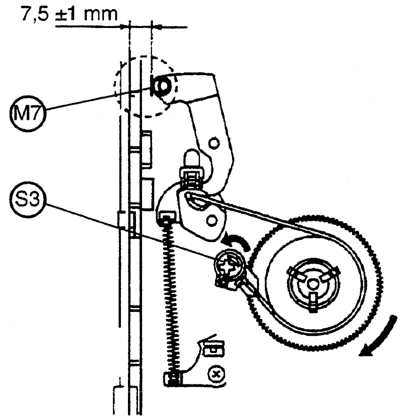


fig. 20

3 - ÜBERPRÜFUNG DES BANDZUGS UND DES WICKELTELLER-DREHMOMENTES:

BANDZUG :

- Die Bandzug-Meßkassette abspielen.
- Der Bandzug auf dem Abwickelteller muß zwischen **45** und **95** g/cm betragen.
- Wenn der Bandzug nicht in diesem Bereich liegt, die Wickelteller-Kopplungseinheit austauschen.

WICKELTELLER-DREHMOMENT :

- Das Drehmoment des Aufwickeltellers muß zwischen **125** und **200** g/cm betragen.
- Wenn der Bandzug nicht in diesem Bereich liegt, die Wickelteller-Kopplungseinheit austauschen.

3 - CHECKING THE BACK TAPE TENSION AND THE SUPPLY REEL TORQUE:

TAPE TENSION:

- Use the torque measurement cassette in the Playback mode.
- The tension on the tape on the reel must be between **45** and **95** gr/cm.
- If the tension lies outside these values, replace the clutch assembly.

REEL TAKE-UP TORQUE:

- The torque on the take-up reel must be between **125** and **200** gr/cm.
- If this is not the case, replace the take-up reel drive clutch assembly.

4 - STATIK-EINSTELLUNGEN AM BANDLAUF:

(Abb. 21)

VORSICHTSMASSNAHMEN:

Der Bandlauf wurde im Werk präzise eingestellt, er braucht also nicht nachgestellt werden. Dennoch können Verschleißerscheinungen oder ein Defekt des Gerätes, der

4 - STATIC ADJUSTMENTS OF THE TAPE PATH: *(fig. 21)*

PRECAUTIONS:

The video tape path is precisely aligned at the factory and breakdown may require the replacement of parts and necessitate the adjustment of the tape path. **For this**

das Auswechseln eines sich auf dem Bandlauf befindlichen Teiles erforderlich macht, dazu führen, daß der Bandlauf neu eingestellt werden muß. **Wir empfehlen, für diesen Arbeitsgang keine Abgleich-Kassette zu verwenden.** Schalten Sie das Gerät auf Wiedergabe und ziehen Sie nach erfolgtem Einfädeln den Netzstecker. Überprüfen Sie die richtige Bandlage in der Mechanik: das Band muß den Bandzugpin, den Löschkopf, die beweglichen Bandführungen, die Ton-/Kontrollkopfeinheit, die Videokopftrommel und die festen Aufrollbandführungen berühren.

operation, it is recommended that the alignment test tape is not used. Load a normal video cassette, select the PLAYBACK mode and allow the tape to fully load, switch OFF the power . Check that the tape is correctly loaded around the mechanism, the tape must be in contact with the following items, back tension pole, the full erase head, tape guides, video head drum and audio-control head.

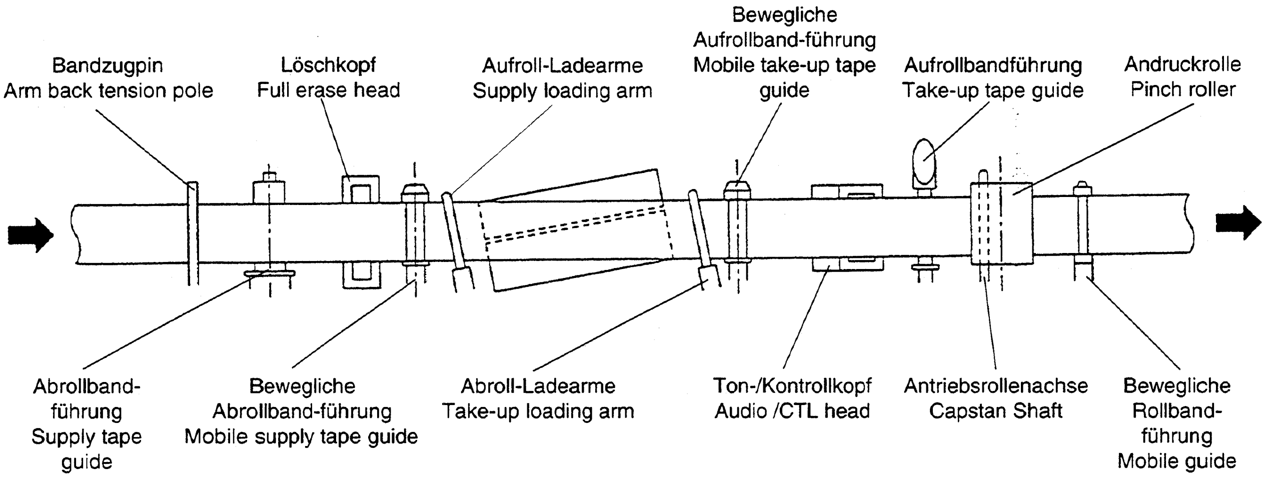

Bandzugpin
Arm back tension pole
Löschkopf
Full erase head
Aufroll-Ladearme
Supply loading arm
Bewegliche
Aufrollband-führung
Mobile take-up tape guide
Aufrollbandführung
Take-up tape guide
Andruckrolle
Pinch roller
Abrollband-führung
Supply tape guide
Bewegliche
Abrollband-führung
Mobile supply tape guide
Abroll-Ladearme
Take-up loading arm
Ton-/Kontrollkopf
Audio /CTL head
Antriebsrollenachse
Capstan Shaft
Bewegliche
Rollband-führung
Mobile guide

fig. 21

VOREINSTELLUNG DER BEWEGLICHEN BANDFÜHRUNGEN:
Wenn das Band an einer der Bandführungen nicht glatt anliegt, diese so einstellen, bis das Band glatt anliegt.

VOREINSTELLUNG DES TON-/KONTROLLKOPFES:
(Abb. 22)
Wenn das Band an der festen Aufrollbandführung nicht glatt anliegt, den Neigungswinkel (I) der Ton-/Kontrollkopfeinheit nachstellen.

MOBILE TAPE GUIDE PRE-SETTING:
If there is tape folding on one of the mobile tape guide, adjust the position of the guide for correct alignment.

AUDIO CONTROL HEAD PRE-SETTING:
(fig. 22)
If the tape folds on the take-up tape guide, adjust the inclination (I) of the audio control head.

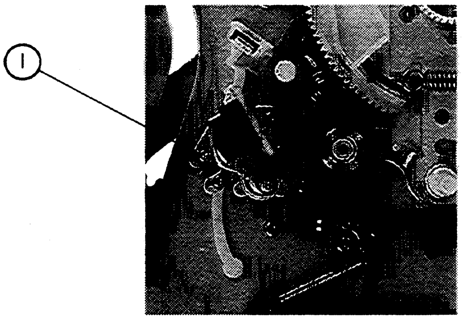


fig. 22

5 - DYNAMIK-EINSTELLUNGEN AM BANDLAUF:

Für diese Dynamik-Einstellungen:
- Die Kassettenhalterung ausbauen.
- Die Grauabstufungen der Referenzkassette ablesen.
- Auf einem Zweistrahl-Oszilloskop (mit Drum Flip Flop (BT002) getriggert) das Video-FM-Signal (BV131) sichtbarmachen (Umschalten der Videoköpfe auf Wiedergabe).

5 - DYNAMIC ADJUSTMENTS ON THE TAPE PATH:

For these dynamic adjustments:
- Remove the cassette holder.
- Playback the grey scale section on the alignment tape.
- Display on a dual-trace oscilloscope the FM video signal (BV131) synchronized by the 25 Hz flip-flop (BT002) (switching of the video heads in playback mode).

A - Feineinstellung der beweglichen Bandführungen:

(Abb. 23)

Die optimale Einstellung ist erreicht, wenn die FM-Hüllkurve von Spuranfang bis Spurende eine konstante Amplitude hat. Eine schlechte Einstellung der beweglichen Abrollbandführung zieht entweder ein Rasterflimmern oder einen Rauschbalken im oberen Teil des Bildes nach sich.
Gleichen Sie die bewegliche Abrollbandführung so ab, daß jegliche Stauchung der FM-Hüllkurve am Spuranfang vermieden wird. Eine schlechte Einstellung der beweglichen Aufrollbandführung zieht Rauschbalken im unteren Teil des Bildes nach sich.
Gleichen Sie die bewegliche Aufrollbandführung so ab, daß jegliche Stauchung der FM-Hüllkurve am Spurende vermieden wird.
Stellen Sie durch Betätigen der Spurlagenfunktion sicher, daß die Amplitude der FM-Hüllkurve von Spuranfang bis Spurende gleichmäßig abnimmt. Falls dies nicht der Fall ist, wiederholen Sie bitte den Abgleich.

A - Fine adjustment of the mobile tape guides:

(fig. 23)

The optimum adjustment is obtained when the amplitude of the FM envelope is constant from the beginning to the end of the track.
If the mobile supply tape guide is incorrectly set, either the frame jumps or there is a noise bar at the top of the screen.
Adjust the mobile supply tape guide to eliminate any constriction of the FM envelope at the beginning of the track.
If the mobile take-up tape guide is incorrectly set, there will be noise bars at the bottom of the screen.
Adjust the mobile take-up tape guide to eliminate any constriction of the FM envelope at the end of the track.
Check, using the tracking control, that the amplitude of the FM envelope decreases in a linear manner from the beginning to the end of the track. If there is pinching of the envelope on the supply or take-up side, re-adjust the corresponding tape guide.

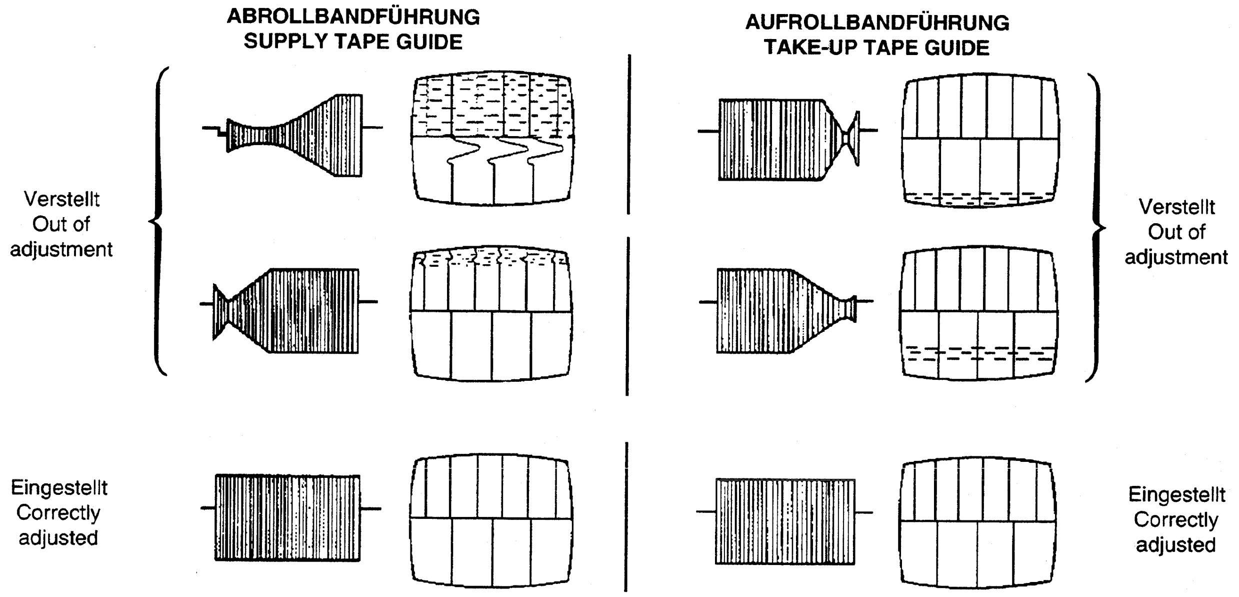


fig. 23

B - Feineinstellung des Ton- / Kontrollkopfes

(ABB. 24 und 25)

Die richtige Einstellung der Lage des Ton- / Kontrollkopfes ist notwendig, um ein korrektes Audio-Ausgangssignal und einen optimalen Rauschabstand zu garantieren.
Ein Abgleichfehler kann außerdem zu einer Instabilität in der Servo-Regelung führen. Besonders wichtig ist diese Einstellung bei Geräten mit Index Suchlauf.
Zur Beobachtung des Audio-Signals wird ein Oszilloskop an den Audio Ausgang angeschlossen.

- Testkassette mit Grautreppe und Audio-Signal (6kHz) abspielen.
- Die Azimut-Schraube (A) nachstellen, bis das Maximum des Audio-Signals am Ausgang erreicht ist.
- Die Höhe des Ton- /Kontrollkopfes mit der Mutter (H) so einstellen, daß das Audio-Signal eine flache Hüllkurve aufweist.
- Die Schrauben (A) und (H) abwechselnd und immer nur wenig (nicht mehr als 45° auf einmal) nachstellen, um einen maximalen Audio-Pegel am Ausgang zu erzielen.

B - Fine adjustment of the audio control head :

(fig. 24 and 25)

The position of the audio control head must be correctly set to ensure that the audio output and the signal /noise ratio are correct.
A misalignment may cause the servo circuits to be unstable. The precision of the adjustment is particularly important for models with index search.
To observe the audio signal, connect an oscilloscope to the AUDIO output.

- Playback the grey scale pattern on video cassette (Audio 6 kHz).
- Adjust the azimuth screw (A) to obtain the maximum output level.
- Adjust the height of the audio control head on the screw (H) so that the envelope of the audio signal is flat.
- Adjust the screws (A) and (H) in alteration and in small steps (45° at a time) to obtain the maximum output level.

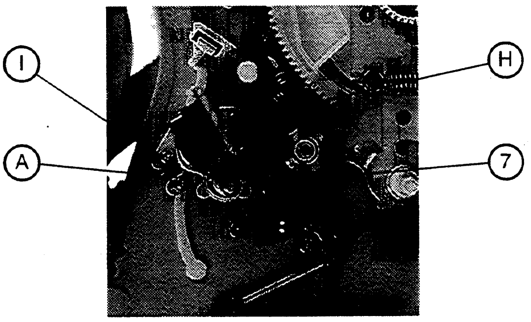


fig. 24

C - Kompatibilitätseinstellung *(Abb. 24)*

Zunächst muß der Videorecorder in sich kompatibel sein. Dazu ein Farbbalken-Testbild aufnehmen und überprüfen, ob die Wiedergabe dieser Aufnahme optimal ist.

- Den Tastkopf eines Oszilloskops an den FM-Ausgang (BV131) anschließen. .
- Spurlagenfunktion aufrufen und durch Drücken der "+" und "-" Tasten die Spurlage auf Null stellen.
- Das Oszilloskop extern mit dem Kopftrommel-Schaltsignal (Drum Flip Flop) triggern. Die positive Flanke zum Triggern verwenden, um das Signal von Kopf 2 darzustellen.
- FM-Wert für die Grautreppe ablesen.
- Die Schraube (7) lösen.
- Den Ton- / Kontrollkopfes unter Beachtung des Signals auf den Videoköpfen mit einem Kreuzschraubenzieher, der in die Einkerbung gesetzt wird (ohne das Gehäuse zu durchqueren), drehen, um den FM-Pegel auf Maximum zu stellen. Die Schraube (7) sofort wieder anziehen.
- Durch Betätigung der Spurlage-Funktion überprüfen, ob das Maximum des FM-Pegels in der Nullstellung erreicht ist.

VI - ÜBERPRÜFUNG DES LAUFWERKS UND FEHLERSUCHE

1 - ÜBERPRÜFUNG VON MOTOR- UND SENSORSYSTEM

Motor- und Sensorsystem wie in dem Diagramm auf Seite 17 dargestellt auf Fehlfunktionen untersuchen.

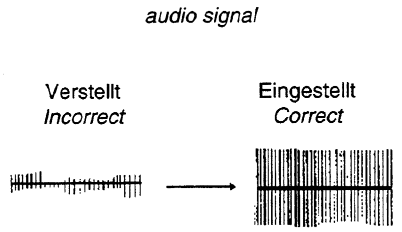


fig. 25

C - Compatibility adjustment *(fig. 24)*

First of all, the video recorder must be made compatible with itself, it is therefore, necessary to record a colour bar test pattern and check that the playback of this recording is optimum.

- Connect the probe of the oscilloscope envelope to the FM output (BV131).
- Enter the tracking mode and select manual tracking.
- Press on the + and - keys and set the track to 0.
- Synchronize the oscilloscope with the head switching flip-flop. Use the positive trigger to display the signal from head 2.
- Playback the grey scale pattern.
- Loosen the screw (7).
- While observing the signal on the video heads, tilt the audio control head,using a Philips screwdriver placed in the notch (so as not to pass through the chassis), in order to obtain the maximum output level. Tighten the screw (7) immeddiately
- Check by pressing the + and - phase keys that the signal is maximum for a track equal to 0.

VI - MECHANICAL DECK TROUBLE SHOOTING AND CHECK METHOD

1 - MOTOR SENSOR SYSTEM CHECK

Check whether any abnormalities are found in the motor or the sensor system as follows in the flow chart on page 17

Der Abstand von ▲ ist zulässig, wenn er innerhalb von 3 mm liegt
The clearance of ▲is allowable if it is within 3 mm

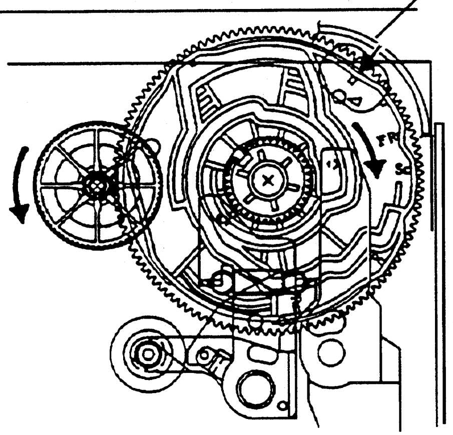
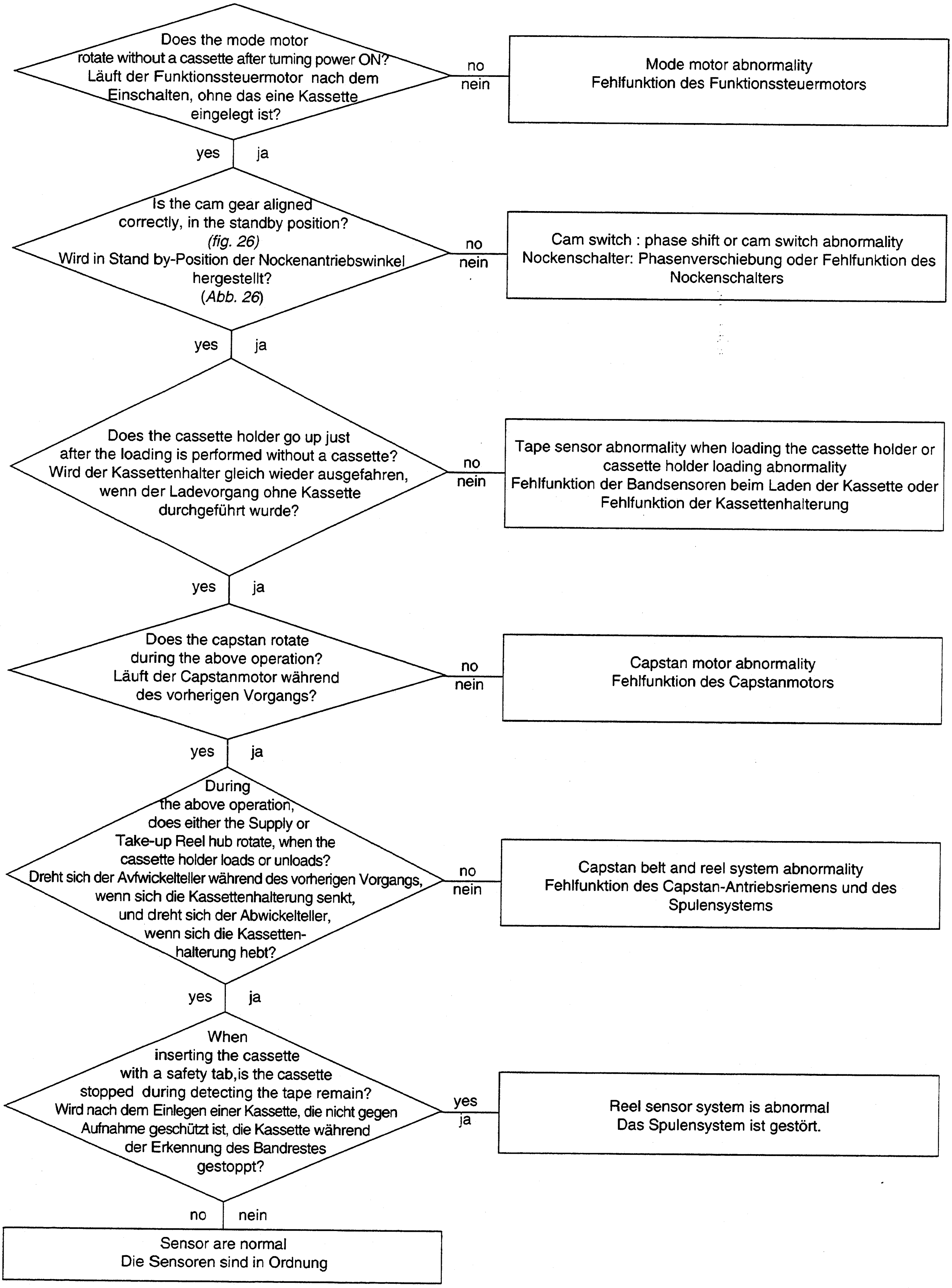


fig. 26


Does the mode motor rotate without a cassette after tuming power ON? Läuft der Funktionssteuermotor nach dem Einschalten, ohne das eine Kassette eingelegt ist?
no
nein
Mode motor abnormality
Fehlfunktion des Funktionssteuermotors
yes
ja
Is the cam gear aligned correctly, in the standby position? (fig. 26) Wird in Stand by-Position der Nockenantriebswinkel hergestellt? (Abb. 26)
no
nein
Cam switch : phase shift or cam switch abnormality
Nockenschalter: Phasenverschiebung oder Fehlfunktion des Nockenschalters
yes
ja
Does the cassette holder go up just after the loading is performed without a cassette? Wird der Kassettenhalter gleich wieder ausgefahren, wenn der Ladevorgang ohne Kassette durchgeführt wurde?
no
nein
Tape sensor abnormality when loading the cassette holder or cassette holder loading abnormality
Fehlfunktion der Bandsensoren beim Laden der Kassette oder Fehlfunktion der Kassettenhalterung
yes
ja
Does the capstan rotate during the above operation? Läuft der Capstanmotor während des vorherigen Vorgangs?
no
nein
Capstan motor abnormality
Fehlfunktion des Capstanmotors
yes
ja
During the above operation, does either the Supply or Take-up Reel hub rotate, when the cassette holder loads or unloads? Dreht sich der Avfwickelteller während des vorherigen Vorgangs, wenn sich die Kassettenhalterung senkt, und dreht sich der Abwickelteller, wenn sich die Kassettenhalterung hebt?
no
nein
Capstan belt and reel system abnormality
Fehlfunktion des Capstan-Antriebsriemens und des Spulensystems
yes
ja
When inserting the cassette with a safety tab,is the cassette stopped during detecting the tape remain? Wird nach dem Einlegen einer Kassette, die nicht gegen Aufnahme geschützt ist, die Kassette während der Erkennung des Bandrestes gestoppt?
yes
ja
Reel sensor system is abnormal
Das Spulensystem ist gestört.
no
nein
Sensor are normal
Die Sensoren sind in Ordnung

2 - CHECKLISTE FÜR DIE FEHLERSUCHE

2 - TROUBLESHOOTING CHECKLIST

Case - Fall	Fault/symptom - Fehler/Symptom	Possible cause - mögliche Ursache	Check method - Überprüfung
1	• Power doesn't turn on. Loading operation is defective. Mode shift operation is defective. • Das Gerät schaltet nicht ein. Fehlerhafter Ladevorgang. Fehlerhafter Umspringvorgang.	• Mechanism stops due to mechanical phase mismatch. • blockierung aufgrund von Phasenverschiebung in der Mechanik	• Check mode shift "cassette out FF/REW position can be performed when turning worm wheel. • Überprüfen, ob das Umspringen von FF auf REW möglich ist, wenn das Schneckenrad gedreht wird.
	• Loading operation is not performed • Ladevorgang erfolgt nicht	• Loading motor doesn't rotate.(loading motor is defective or circuit is defective) • Lademotor läuft nicht. (Lademotorfehler, Schaltkreisfehler)	• Check loading motor whether it turns by the outer power supply (12,5V) • Überprüfen, ob der Lademotor mit einem externen Netzteil läuft (12,5V)
	• Unloading operation is not performed • Entladevorgang erfolgt nicht	• S reel does'nt wind the tape • Der Abwickelteller spult nicht auf	• Refer to case 3 in this table. • Siehe Fall 3.
2	• Playback operation is not performed • Keine Wiedergabe	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch doesn't press • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle drückt nicht	• Check mechanical position as in playback mode • Position der Mechanikteile überprüfen (Wiedergabe)
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Capstanmotor läuft nicht (Capstanmotor-, Schaltkreisfehler)	• Check capstan motor • Capstanmotor überprüfen
	• Playback picture doesn't appear. Video recording can't be performed • Das Wiedergabebild erscheint nicht. Videoaufzeichnung unmöglich	• In case of no mechanical problem: Drum is defective.(circuit is defective) • Falls kein Mechanikfehler vorliegt: Kopftrommelfehler.(Fehler im Schaltkreis)	• Check drum assembly • Kopftrommel überprüfen
3	• Playback interruption • Wiedergabe unterbrochen	• Reel rotation detection is defective. (sensor is defective, circuit is defective) • Fehler in der Spulendrehungserkennung. (Sensorfehler, Schaltkreisfehler)	• Check sensor output • Sensorenausgang überprüfen
	• Recording interruption • Aufzeichnung unterbrochen	• Idler doesn't swing • Zwischenrad ist blockiert.	• Check mechanical position as in Playback mode • Position der Mechanikteile (Wiedergabe) überprüfen
		• Reel belt is removed • Spulenantriebsriemen fehlt	• Check the reel belt is removed or not • Überprüfen, ob der Spulenantriebsriemen vorhanden ist
4	• FF operation is not performed. FF operation is defective. REW operation is not performed. REW operation is defective. Others : REV/FF is not performed. Others : REV/FF is defective. • Band wird nicht vorgespult. Fehler beim schnellen Vorlauf. Band wird nicht zurückgespult. Fehler beim schnellen Rücklauf. Andere : kein REV/FF. Andere : kein REV/FF.	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch is not released • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle ist nicht gelöst	• Check mechanical position as in FF/REW mode • Position der Mechanikteile (FF/REW) überprüfen
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Der Capstanmotor läuft nicht (Capstanmotorfehler oder Schaltkreisfehler)	• Check capstan motor • Capstanmotor überprüfen

Case - Fall	Fault/symptom - Fehler/Symptom	Possible cause - mögliche Ursache	Check method - Überprüfung
5	• REVIEW is not performed • Kein REVIEW	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch doesn't press • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle drückt nicht	• Check mechanical position as in REVIEW mode • Position der Mechanikteile (REVIEW) überprüfen
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Capstanmotor läuft nicht (Fehler im Capstanmotor oder im Schaltkreis)	• Check capstan motor • Capstanmotor überprüfen
6	• Slot-in is not performed Cassette can't be inserted • Kassette wird nicht eingezogen. Kassette kann nicht eingelegt werden	• When rod (24) is mounted on the mechanical deck, the position is not correct • Dreieck (24) nicht in der richtigen Stellung auf dem Laufwerk angebracht	• Check mechanical position shown in *(fig. 8)* • In *(Abb. 8)* gezeigte Position der Mechanikteile überprüfen
7	• Capstan servo doesn't work Capstan servo is uneven • Capstan-Servo funktioniert nicht Capstan-Servo ungleichmässig	• Capstan motor is defective • Fehler im Capstanmotor	• Check capstan motor • Capstanmotor überprüfen
	• Tape speed is abnormal FG pulse is not output • Bandgeschwindigkeit ist anormal Keine FG-Pulsausgabe	• Audio control head output is defective (circuit is defective) • Fehler am Ton-/Kontrollkopfausgang (Schaltkreisfehler)	• Check audio control head Check control output • Ton-/Kontrollkopf überprüfen Kontrollausgang überprüfen
8	• Audio output doesn't come out Audio output is small Audio output variation is large Audio output is uneven Audio distortion • Kein Ton Ton leise Starke Tonausgabeschwankung unregelmässige Tonausgabe Tonverzerrung	• Audio control head is defective • Fehler im Ton-/Kontrollkopf	• Check audio control head Check control output • Ton-/Kontrollkopf überprüfen Kontrollausgang überprüfen
		• Tape transport adjustment • Bandantriebseinstellung	• Perform tape transport adjustment again after confirming tape transport condition. • Bandantrieb nach Feststellung des Bandantriebszustands überprüfen
	• Audio noise Others : Audio is defective • Rauschen Andere: fehlerhafte Tonausgabe	• Hi-fi head (drum) is defective (circuit is defective) • Fehler im Hi-fi-Kopf (Trommel) (Schaltkreisfehler)	• Check drum. Check whether B+14V is supplied • Trommel überprüfen. Überprüfen, ob B+14V gespeist werden.

Wird bei den oben beschriebenen Abläufen ein Fehler in der Mechanik festgestellt, muß folgendermaßen vorgegangen werden:

- Demontage, mechanische Phasenverschiebung: reparieren
- Teilefehler, Teileschaden: Teile auswechseln

Sollte die Mechanik keine Fehler aufweisen, Schaltkreise überprüfen.

If the mechanism is found out to be defective according to the procedures described above, perform the following :

- Disassembly, mechanical phase mismatch : repair correctly
- Part defect, part damage : replace parts

If the mechanisml is found not to be defective, check the circuits.

Abbreviation list :

FF	Fast Forward
FG	Frequency Generator
REV/FF	Review
REW	Rewind
SU	Supply
TU	Take-up
UN-LO	Unload

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